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Ripples through the City

Prising Open Public Bike Journeys and the Processes of Embedding a New Mobility System in a City

A thesis submitted in fulfilment of the requirements for the degree of Doctor of Philosophy (Sociology)

by

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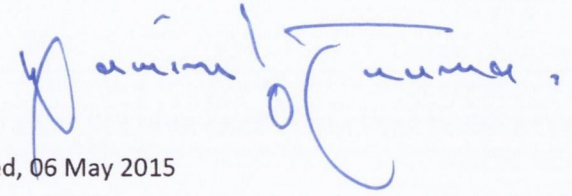

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Summary

This thesis is concerned with mobility and processes of social change. It sets out to prise open the journey experiences of public bike users and to determine what, if anything, is distinctive about public biking compared to other forms of urban mobility. It also seeks to elucidate the nature of the processes or 'ripple effects' associated with embedding a public bike sharing scheme (PBSS) into the physical, social and institutional fabric of a city.

The research was conducted through a study of the *dublinbikes* ('3rd generation') PBSS which was launched in Dublin in 2009. Uniquely for a study of PBSSs, within the overarching study design two slightly overlapping case studies were conducted: one, examining journey experiences that was guided by an array of theories from the *mobilities* sphere; the other, exploring the 'systems aspects' of introducing the scheme, guided by a conceptual framework used extensively in transitions research (the Multi-level Perspective). The study employed a mixed method data collection approach encompassing semi-structured interviews with users (and non-users) of the PBSS, in-depth interviews with key informants, together with analyses of secondary quantitative data, statutory plans, policy documents, engineering guidance, and other material.

This thesis argues that there are distinctive types of freedoms, and multi-sensory and emotional experiences of the urban environment associated with public biking. Furthermore, through an examination of a number of domains — politics and advocacy, rules and regulations, the emergence of new actors and re-alignments of existing relationships, infrastructures and traffic management measures, media representations of cycling — it is revealed that the introduction of the PBSS set in motion an array of unpredicted processes and cascade effects (or feedback loops in complex systems terms) which are now playing out.

The knowledge generated from this study of the planning and early operational phases of a new socio-technical system enhances our understandings of processes of change associated with PBSSs and, more broadly, of some potential transition pathways towards lower carbon futures. The thesis also raises new questions for future research.

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Acronyms, Abbreviations and Language Use

ATM	Automated Teller Machine ('Cash machine')
Cllr.	Councillor
DB	*dublinbike* or *dublinbikes*
GCC	Grand Canal Cycleway
GDA	Greater Dublin Area (i.e. the combined counties of Dublin, Meath, Kildare and Wicklow)
GHG	Greenhouse Gas
ICT	Information Communications Technology
JCD	J.C. Decaux (the outdoor advertising company and *dublinbikes* scheme operator)
LAP	Local Area Plans (i.e. statutory spatial plans at the local level)
MLP	Multi-level Perspective
NCPF	National Cycle Policy Framework
NDG	No Date Given (for references - e.g. websites or printed documents)
NTA	National Transport Authority
NYC	New York City
PBSS	Public Bike Sharing System / Scheme
PPP	Public Private Partnerships
PT	Public Transport
R&D	Research and Development
SME	Small / Medium sized Enterprise
SPC	Strategic Policy Committee (of Local Authorities)
S-T	Socio-Technical
STS	Science and Technology Studies
STZ	Strategic Development Zones (another type of statutory spatial plan)
TCD	Trinity College Dublin
TD	Technological Determinism

Note:

I use the terms 'public bike sharing scheme / system' and 'bike-share scheme / system' interchangeably unless otherwise stated. I use the term *'dublinbikers'* in lieu of the (slightly clumsier sounding) *'dublinbikes* users' or 'users of *dublinbikes*', and similarly 'public-bikers' in lieu of 'public bike users'. I also talk about *'dublinbiking'* and 'public-biking' to describe the activities and practices. I use the terms 'privately owned bicycles/bikes' and 'ordinary bicycles' to differentiate those machines from public bikes, while acknowledging the separate and specific historical meaning of 'the Ordinary' (high wheeler) bicycle, as discussed in Chapter 2. I also sometimes talk about 'other cyclists' to differentiate them from 'public bikers' while being conscious of the blurring of categories (as discussed in Chapter 5). For ease of reading and in accordance with convention, the term 'Ireland' is used to mean the 'Republic of Ireland' while in some discussions, I use 'Republic of Ireland' to differentiate specifically from 'Northern Ireland'. Finally, I frequently use 'Council' or 'the Council' as shorthand for 'Dublin City Council' in those sections where there is a lot of discussion about that organisation.

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Chapter 1 – Introduction

1.1 A once in a several decade opportunity

The main question on my mind on commencing the research was whether or not urban bicycle users had more convivial journeys than their non-bicycling counterparts – and I strongly suspected the answer was 'yes'. Many years of being a (sociable) urban biker, and indeed a cycling campaigner, had led me to believe that city cycling was somewhat synonymous with random encounters and convivial 'chats' on the street, and so my initial research mission was to explore these street sociabilities and the next question was, simply, 'how'? By what now seems like a great stroke of luck, the *dublinbikes* public bike sharing scheme (PBSS) was launched within just a few days of the formal start to my research studies in September 2009. Therefore it seemed opportune to examine the mobile experiences of public bicycle users, as opposed to ordinary[1] bike users, as I set about delving into questions around the conviviality of cycling.

I soon realised though that the *dublinbikes* scheme was not only, what appeared to be, a new form of mobility in Dublin; by 2009, public bikes had a geographical presence in several hundred cities globally[2]. And then, as I began to take a longer view of mobility in Dublin, it dawned on me that there had only been around half a dozen different urban transport regimes[3] over the last two centuries in Dublin (see for example Barry, 2014)[4] and indeed in many other European cities: those based around horses and horse-drawn carts on unpaved or cobblestoned roads, the canal based system (horse-drawn or otherwise) for interurban (freight) movements, suburban trains, horse-drawn trams, electrified trams, bicycles and motorised cars. How then were public bike schemes fitting into this longer history? So, it began to occur to me then that the launch of the *dublinbikes* system was presenting a, perhaps, once in a several-decade or even half-century opportunity to study much wider processes around the emergence and embedding in a mid-sized European city of a new transport technology – or, more correctly, a new socio-technical system[5].

[1] While I (briefly) discuss 'Ordinary' (Penny Farthing) bicycles later on in the thesis, here I simply mean privately-owned bicycles (or 'non-public bike sharing scheme' bikes) by the term 'ordinary'.
[2] As I recount in Chapter 2.
[3] I use the term 'regime' quite loosely here to mean a dominant or well established mode of transport. In Chapter 3 I examine the term more closely.
[4] Interestingly though, there is no mention whatsoever of bicycles in Barry's online article: BARRY, M. 2014. *Transport in 19th Century Dublin* [Online]. Available: www.theirishstory.com/2014/03/06/transport-in-19th-century-dublin/ [Accessed 20/July 2014].
[5] At this point, the term 'socio-technical system' can be understood simply as meaning a particular type of system that has both technical and social (or institutional) components. I explore the concept more fully in Chapter 3.

This was too interesting a real-life social experiment to ignore and it went beyond 'only' studying the conviviality of journeying. I wanted to know: what was the impact of this new technology on the lives of Dubliners and on Dublin (and beyond) in the widest sense possible.

The new technology appeared on the streets of Dublin amid much media scepticism, typified by the following Irish Times opinion piece:

> The construction of new stands heralds the introduction of the city council's rent-a-bike scheme, but there are fears it could fall foul of vandals and thieves... Dublin does not have a particularly proud record when it comes to respecting public property, so there has to be some anxiety about the fate of these 450 bikes, never mind how plain they look, a dash of blue paint notwithstanding. They're still bikes, and bikes which shall be known to the whole city to be roosting like little metallic sitting ducks at allocated nesting locations every night. (Boland, 2009)

Five years on though, the scheme confounded its critics with 42,000 annual subscribers on board (Harrison, 2014), few bikes vandalised (Sullivan, 2010) and almost eight million rentals since its launch (Ginty, 2014b). Additionally, it has recently undergone a three-fold expansion to 1500 bicycles[6] (ibid.), with a larger still expansion plan in place with an aim to reach 5,000 bikes over the coming years (Dublin City Council, 2011b: 11). While it is often referred to as "one of the most successful bike rental schemes in the world" (Daly, 2011), what is still utterly unclear is whether or not the new mobility system is generating (meaningful) new experiences of urban life or, separately, is setting in motion new (unpredicted) processes and cascade effects in other urban domains. These questions demand more serious attention and are the focus of my work.

The reader will note that in the title of the thesis and throughout this work, I write about 'prising open' public bike journeys. This metaphor of 'prising something open' - say, a tin - aims at conveying the ideas that this sphere of knowledge is normally closed and then something new emerges from the (protracted) investigations. There is also something of a resistance to having this sphere examined because of the cultural preferences for examining other aspects of journeys (or 'trips') – such as speeds, travel times and costs. So, just as Schivelbusch (1986) opened up the railway journey, I am opening up the public biking journey. I revisit these questions in my discussions around the differences between transport studies on the one hand and mobility studies on the other hand in Chapter 3.

[6] Having started out with 450. See Chapter 2.

My research takes place in an Irish and international context in which transport and urban policy-makers are showing a far greater interest in the bicycle[7] compared to 1970s, 1980s and (early) 1990s (see, for example, European Commission, 1999, Department of Transport, 2009b, Goodwin, 2013, Golbuff and Aldred, No year given (assume 2011)) – with the most recent Irish Programme for Government stating:

> We will continue to invest in the National Cycle Policy and we will look to extend the Dublin Bikes Scheme across the wider Dublin area and to other cities and integrate the scheme much more effectively with public transport links (Department of the Taoiseach, 2011: 62).

It appears then as if the bicycle has moved in, at least a little, from the margins of transport thinking – a point I revisit in the main body of the thesis.

1.2 Thesis structure

Chapter Two:

This thesis begins with an examination of the history and diversity of organisational forms of public bike systems, with discussions drawing on both the peer reviewed and 'grey'[8] literatures. My emphasis is on tracing the shifts in the ideologies that underpinned each of the 'generations' of public bike schemes – and in the dominant (transport/planning) ideologies of the time - since their inception in the mid-1960s. My focus then shifts to the case study city for the research with a short overview of the transport (planning) history of Dublin and current state of play, before discussing the first attempts to bring a *White Bike* scheme to the Irish capital in the mid-1990s. This sets the scene for introducing the *dublinbikes* scheme and discussing some of the criticisms levelled at it prior to and shortly after its launch in 2009. The chapter concludes with a short review of the now rapidly growing literature on public bikes - including the *dublinbikes* system itself, and with raising a number of as-yet unanswered questions on public bikes, questions that further inform the aims of this research.

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[7] Here I mean bicycles more generally, and not (just) public bicycles.

[8] There are a number of definitions of grey literatures, but I use it in Barratt and Kirwan's sense to mean "government publications, reports, statistical publications, newsletters, fact sheets, working papers, technical reports, conference proceedings, policy documents and protocols and bibliographies": BARRATT, H. & MARIA KIRWAN, M. 2009. *Grey literature* [Online]. Available: http://www.healthknowledge.org.uk/public-health-textbook/research-methods/1a-epidemiology/grey-literature [Accessed 29/Sept 2014].

Chapter Three:

This chapter gets to the heart of the conceptual and theoretical issues driving the research and situates my study at the intersection of several distinct literatures. My arguments adopt a mobilities studies approach over the more traditional transport studies perspective and my theories around journey experiences focus on the sensual, emotional and social experiences of travel more than the more easily quantifiable dimensions of movement. Then, moving beyond the experiences of individuals, I draw on the spheres of science and technology studies and theories of transition as I begin to think about the public bikes as a system – my argument being that in order to understand the public bike phenomenon, one needs to take as holistic approach as possible. By the end of this chapter, I have chiselled out the exact aims and scope of my research.

Chapter Four:

Responding to both the micro- and macro-level questions which have emerged around the nature of the public bike phenomenon, this methodology chapter describes the research design adopted in the study and details the parallel mixed method approach used in investigating both the experiences of *dublinbikes* users and the wider domains that are bound up with the public bikes socio-technical system.

Chapter Five:

Of the three empirical chapters, the first two (Chapters Five and Six) draw almost exclusively on the ethnographic work used to prise open the *dublinbikes* journey experiences. In Chapter Five here, the focus is on the experience of freedom of public bike users, a theme that has run through the history of transport since (at least) the mid nineteenth century. Several dimensions of freedom are examined and the chapter then begins to suggest some of the wider cascade effects that can be linked to the introduction of the scheme.

Chapter Six:

This chapter delves in greater detail into the experiences of the *dublinbikes* users, drawing again on the ethnographic work conducted. The focus here is not only on the sociable dimensions of travel – my initial research interest, it is also on the sensual and emotional dimensions of the mobility experience. What this chapter reveals is that there is a distinctive urban experience associated with being a public biker – as against being on foot, travelling in motorised (mass) transport or even pedalling a privately-owned bicycle.

Chapter Seven:

In this chapter, the gaze moves beyond public bike user experiences and onto the much broader domains shaping and being shaped by the *dublinbikes* scheme. Drawing particularly on the Multi-Level Perspective (MLP) theoretical framework developed and applied by scholars of the history and sociology of technology and of transitions, the focus here is on understanding the very diverse (and thus-far largely unexplored) processes associated with embedding a new type of socio-technical system into the political, physical, institutional and cultural environments of the case study city. Drawing on the metaphor of the ripple as used in the thesis title, this chapter maps out the shores reached by the ripples generated through the introduction of the *dublinbikes* PBSS scheme to the city.

Chapter Eight:

The conclusions chapter summarises the main contributions made by this thesis. It looks beyond public bike systems and discusses the wider implications of the research findings including policy implications. Moreover, it reflects on the value of studying a new (or renewed) form of urban mobility as a point of entry for understanding broader social and technological processes. Finally, the chapter suggests a number of lines of enquiry for future researchers – lines which have been identified through prising open the *dublinbikes* journeys and delving into the much wider systems effects of introducing a public bike system into a city.

Chapter 2 – The Changing Nature of Public Bikes

2.1 Introduction

This thesis begins with an examination of the history and diversity of organisational forms of public bike systems. My interest in the public bike schemes, as I began to explain in Chapter 1, springs from seeing them as a new form of urban mobility that is enabled by recent developments in information and communications technology (ICT), but also as an intriguing re-invention of the bicycle – a technology which I have long admired for, as Illich (1974) puts it, its "thermodynamic thrift" and efficiency as well as its affordability to almost everyone. My main argument in this chapter though is that the ideological underpinnings of each of the generations of public bikes shifted dramatically following its birth in the mid-1960s.

I also begin to examine the case study city for the research with a short overview of the transport (planning) history of Dublin and its current state of play, before discussing the first attempts to bring a *White Bike* scheme to the Irish capital in the mid-1990s. This sets the scene for discussing the *dublinbikes* scheme itself and some of the criticisms levelled at it around the time of its launch in 2009. I conclude the chapter by briefly reviewing the now rapidly growing literature on public bike schemes - including the *dublinbikes* system itself, and raising a number of as-yet unanswered questions on public bikes, questions that inform the aims of this research.

2.2 Definitions, histories and organisational forms

2.2.1 Definitions and numbers of schemes

Much of the detailed chronological history of public bike schemes has been covered by DeMaio (2009), Beroud and Anaya (2012) and Shaheen (Shaheen et al., 2010, Shaheen et al., 2012a). My emphasis in the following sections is on highlighting the main milestones in the development of the schemes and, in particular, on the shifts in political ideologies underpinning their various forms.

Beroud and Anaya define public bike schemes as:

> a mobility service mainly implemented in an urban environment for local trips. They are schemes for hiring bicycles for short periods and, through the lack of personal bicycle ownership and through the sharing of bicycles by a large number of people, they evoke the concept of a public service (2012: 271).

Their definition captures the largely urban character of schemes and stresses the public *service* dimension - even though, as we will see, many schemes are of the nature of public private partnerships (PPPs). They also consider two conditions as distinctly characterising the schemes: "[f]irst, *users should be able to drop off a public bicycle in a different place from where it was picked up*... The second condition is that *hire points are located in the public domain* so that there is a possibility of interaction with and accessibility for any public space user." (ibid. 271-272).

As regards the number of public bike or bike share schemes (PBSSs) in place, Beroud and Anaya contend that "[t]here are contrasting views about the exact number of schemes that have been implemented, partly based on different public bike scheme definitions". They indicate that estimates range from between 135 and 460 schemes in existence, and between 200,000 and 236,000 bikes available (2012: 279). As of 1st July 2014, Meddin and DeMaio (2014a) estimate on their blog dedicated to public bikes that globally there are now 721 cities with "3rd generation[9] (high-tech), 3rd+ generation and mixed 3rd generation/manned bike-sharing services" in operation, and with 814,000 bicycles in use in these cities[10]. To put the above numbers of schemes and cities in some context, we know from Senior, drawing on the research of Hass-Klau et al. (2003), that "there are over 350 light rail schemes globally, far in excess of alternatives like guided bus or busways"(Senior, 2009: 187). Therefore, it seems that public bike schemes are more common than light rail schemes.

2.2.2 A brief reminder of the longer bicycle history context

While public bikes can be considered to have a history reaching back to Amsterdam in the mid-1960s (see below), this half-century[11] of bicycle based technological development can be situated within a far longer (but somewhat broken) history of bicycle[12] development. To reflect briefly on this longer history, or at least on the 19th century part of the story, the bicycle is generally[13] traced

[9] See Sections 2.2.3 – 2.2.5 below for a discussion of the different generation of systems.

[10] While it certainly appears that there has been a rapid recent expansion in the number of PBSSs being implemented worldwide, this thesis does not aim to delve deeper into the enumerating difficulties of capturing the latest position as regards the degree of diffusion of the bike share concept.

[11] Within this 50 year history, there were significant breaks without any (or with very little) technological development – see below.

[12] Or, more correctly, 'velo-development' since tricycles form part of this history as well.

[13] According to Oddy (ODDY, N. 2006. Bicycle, Yale University Press. *Journal of Transport History,* 27, 159-160.), there are many myths and lies around earlier histories of the bicycle including Leonardo da Vinci's

back to 1817-18 and the running-machine of "Baron Karl von Drais, Master of the Forests in the Dutchy of Baden" in Central Germany (McGurn, 1999: 12) – "undoubtedly the first bicycle" according to Oddy (2006)–and then onto the front-wheel driven velocipedes of Paris in the 1860s (McGurn, 1999: 31). Interestingly, Parkin argues that the development of smooth and well laid out road networks in Haussman's renovation of Paris from 1853 to 1870 helped to allow "the bicycle to become a common means of transport" (2012a: 3) – thus raising an important point of the shaping effect of wider political shifts on technological development, a point I return to later in the thesis.

To turn to the Irish context, Griffin, drawing on discussions in the *Irish Cyclist* magazine of 1895, suggests that the first modern cycle to be used in Ireland was the velocipede and "[t]he best claim" as to who was the first Irish cyclist "appears to be that of J. Townsend Trench of Kenmare, who provided evidence that he purchased a French velocipede in 1864" (Griffin, 2006: 216). The velocipede was superseded in the 1870s by the high-wheeled Ordinary (or so-called Penny-Farthing bicycle, "a term often used by non-cyclists to describe the Ordinary" (ibid.)) and then by the safety bicycle which arrived "somewhere between 1885 and 1891, [and] sent the high-wheel bicycle into irreversible decline" (McGurn, 1999: 83). On the social norms around early bicycle use in Ireland, Griffin argues that "Irish society and the Irish cycling world were slow to accept the idea that cycling was an acceptable or respectable form of activity for women" and cycling was an almost "exclusively male preserve... from the mid-1860s to the mid-1870s" (2006: 215). We will see later that this gendered cycling history has some resonances with issues facing public biking in Dublin in the 21st century. The final technological development and bicycle history milestone worth mentioning at this juncture – and one with an especially strong Irish dimension - is the development (in 1887-88) by John Boyd Dunlop of the pneumatic tyre and the establishment of the 'Pneumatic Tyre and Booth's Cycle Agency' company in Dublin in 1889 (Mitchell, 2008: 43). McGurn describes this development as "perhaps as significant as the arrival of the low safety itself" (1999: 84) and by 1898 bicycle design can be thought of as having largely stabilised with Pinch and Bijker noting that "the word 'safety bicycle' [then] denoted a low-wheeled bicycle with rear chain drive, diamond frame, and air tyres" (1984: 416).

A cycling boom developed in the 1890s and a rapid transition ensued with the bicycle moving from being a sporting artefact for the more leisured classes to being almost completely democratized (in European cities) over the decades of the 1920s to 1950s (McGurn, 1999). However over the decades following WWII, life on European roads changed rapidly with McGurn

bicycle. (I.e. the drawing of the bicycle, thought to have come from the studio of Leonardo da Vinci is now considered a hoax).

for example, drawing on the research of Plowden and Hillman (1984), indicating that the "the total number of kilometers travelled by British cyclists dropped steadily from about 23,000 million in 1952 to just under 4000 million in 1974" (McGurn, 1999: 166) with 'experts' like traffic engineers and urban planners framing automobility as the inevitable modern future (Oldenziel and Albert de la Bruhèze, 2011).

2.2.3 First generation public bikes

It was within such an era of rapid motorisation of society that the original *Witte Fietsen* (*White Bikes*) scheme was launched in Amsterdam in July 1965 (DeMaio, 2009: 42). One principal character behind the concept of providing bicycles for public use was Luud Schimmelpennink from Provo, a Dutch insurrectional movement inspired by "anarchism, Dadaism, German philosopher (and counter-culture guru-to-be) Herbert Marcuse, and the Marquis de Sade" (Voeten, 1990). Provo staged political and cultural interventions into the symbolic and everyday spaces of Holland from 1962 until their formal dissolution in1967 (Kempton, 2007). The core philosophy of Provo cofounder, Robert Jasper Grootveld, was the "belief that the masses had been brainwashed into becoming a herd of addicted consumers, the 'despicable plastic people'" and he maintained that "new rituals were needed to awaken these complacent consumers" (Voeten, 1990). Grootveld's observations on consumerisms seem particularly poignant in the summer of 2014 when the *dublinbikes* scheme adopted commerical sponsorship: as J.C. Decaux and Dublin City Council (2014b) reported,"[o]n the night of 27th June 2014, Coca-Cola Zero dublinbikes were rolled out across Dublin city". I revisit and explore this point further below.

The *White Bike* proposal was one of several *White Plans* conjured up by Provo. These included "the White Chimney Plan (put a heavy tax on polluters and paint their chimneys white), the White Kids Plan (free day care centers)... and the White Wife Plan (free medical care for women)" (Voeten, 1990). The *White Victim Plan* proposed that "[a]nyone causing a fatal car accident should be forced to paint the outline of their victim's body on the pavement at the site of the accident. That way, no one could ignore the fatalities caused by automobiles" (ibid.). The modern international "ghost-bike" phenomenon – in which a plain white bicycle is secured at the location of a fatal cyclist collision – would appear to draw heavily on this Provo symbolism although scholars of roadside memorials such as Dobler (2011) and MacConville (2010) have not drawn any explicit link between the Provo's White Victim Plan and the earliest recorded incidence of the use of ghost-bikes (St Louis, US, in 2003 according to MacConville (2010)). It may well be the case that the two memorialising (and political) ideas emerged entirely separately, or perhaps any links which may existed between the two have never been documented. To turn to the Irish context, there have been (at least) two ghost-bike unveilings at sites of fatal cyclist collisions in Dublin

according to the Ghostbikes website which records the sites of the emplacements of white bikes as reminders of the tragedies that took place on "otherwise anonymous street corner[s]" (Ghostbikes.org, 2011).

Under the Provo *White Bike Plan*, cars would be pushed out of the centre of Amsterdam and a new instrument – free bicycles - would be introduced. Their Manifesto declared that the white bicycle symbolized "simplicity and healthy living, as opposed to the gaudiness and filth of the authoritarian automobile" (Voeten, 1990). The free bicycles were, unambiguously, a symbol of radical egalitarianism and anti-capitalism, the antithesis of owning relatively expensive motor cars to which much of the population did not have access[14]. The intention was that the public would use any of 10,000 free bikes scattered around the city and, at the end of their journey, leave them elsewhere for others to use. The *Witte Fietsen* idea was rejected by the municipality of Amsterdam as for them, as explained by Luud Schimmelpennink in a later interview reflecting on the period, "the bike was out, it was something out of the [second world] war... and the future was for the car" (Woodgate, 2007). After this rejection, Provo painted dozens of bicycles white and left them on the streets for public use but since the municipal law forbade citizens to leave unlocked bikes on the streets, the police impounded them. DeMaio recounts that once the bikes were returned to Provo, they equipped them with combination locks with the numbers painted onto the bicycles. While ultimately the bicycles ended up in canals or were "appropriated for private use" (2009: 42), the idea of having free public bicycles had entered the public consciousness.

The next (Dutch) manifestation of what is now referred to as *the first generation* of public bikes emerged in 1975 when they were used within closed areas such as in the De Hoge Veluwe National Park. In 1975 there were 50 bicycles available in the Park and by 2007 there were 1,700 bicycles (Woodgate, 2007). The target audience was (and is) visitors who arrived at the park by private or public motorized transport, with bicycles taken from and returned to fixed locations at which the bicycles remain unlocked. Crucially, from the technology perspective, the system relies on a degree of public trust, thus retaining some of the simplicity and spirit of the Provo's scheme, but it has evolved so that there are some defined stations or bicycle parks for the (white) bicycles and it all takes place within the bounds of a well-defined area – "a closed system" as it could be

[14] According to Dargay et al. vehicle ownership levels (meaning vehicles with at least 4 wheels, including cars, trucks, and buses) per 1000 population in 1960 (and, for comparison, in 2002) in the following countries were: Great Britain, 137 (515); Ireland, 78 (472); Netherlands 59 (477); Sweden, 175 (500). DARGAY, J., GATELY, D. & SOMMER, M. 2007. Vehicle Ownership and Income Growth, Worldwide: 1960-2030.: 5. There figures are national level figures so it is assumed that there are variations across regions and between cities.

termed. It is conceivable that members of the public could steal or vandalise the bicycles but this is more difficult than on the streets of Amsterdam. The shift here was towards an increasing degree of management of the bikes in quite a distinct, controlled setting, with an institution – rather than a creative collective - having responsibility for supplying and maintaining bicycles.

Meanwhile in France in the 1970s, La Rochelle was the pioneer city which introduced a first-generation scheme, but according to Beroud and Anaya, "[i]t encountered the same problems of theft and vandalism of the first-generation scheme in Amsterdam" (2012: 281).

2.2.4 Second generation public bikes

The so-called 2nd generation of bike-sharing programs began in early 1990s with small schemes operating in the Danish towns of Farsø, Grenå and Nakskov, and in 1995 the first large-scale 2nd generation program was launched in Copenhagen (DeMaio, 2009: 42). This consisted of 1,000 bikes and by 2007 had expanded to 2,000 bikes and 110 take/leave parking spaces. The bikes were equipped with solid rubber tyres and wheels with advertising plates, and the bikes designed for intense utilitarian use (Figure 2.1). They could be released with a coin-deposit system similar to a shopping trolley and could be picked up and returned at specific locations throughout the central city.

Figure 2.1 – Bycyklen København – Copenhagen City Bike

Under this system there was increased involvement by the municipality by way of establishing a network of bicycle stations and supplying the bicycles while, according to the official website, the city bikes were "maintained by Incita, a non-profit organization using the city bikes to train

hundreds of rehabilitees every year" (Bycyklen København (City Bikes Copenhagen), 2011b). The scheme was therefore a collaboration or partnership between the municipal government, local tourist bodies, a non-profit organization operating the scheme and private financiers supporting it through sponsorship. The main target audience for the Bycyklen was tourists (and, to a lesser extent, residents) taking short trips within the small central city zone.

The official website indicated that tourists regarded the bikes as a tourist attraction in themselves and it also included the(quaint-sounding) statement that "[i]f you see a citybike outside the citybike zone, please send an sms to + 45 6070 1434... [and] please inform us about where we can relocate the city bike." (Bycyklen København (City Bikes Copenhagen), 2011a). Therefore it can be seen that the system operated on the basis of complete anonymity and a strong element of trust that users would return bicycles. So while the 2nd generation of PBSSs shared some of the characteristics of the Dutch *Witte Fietsen* (e.g. there was no time limit on the use of bikes (Beroud and Anaya, 2012: 273)), there was a systematising of the concept with bespoke bikes, defined parking spaces, and the participation of more actors including, crucially, advertisers. The advent of an advertising dimension can be seen as marking a significant shift from the anti-capitalist ideological underpinnings of Provo's original concept.

2.2.5 Third generation public bikes

According to Hoogma et al. (2005), it was in response to the "serious operational difficulties" – i.e. theft, vandalism, negligent maintenance, undetected defects and unreliable bicycles –associated with earlier PBSSs that a new generation appeared. The idea for Portsmouth's *Bikeabout* scheme emerged from Portsmouth University's *1992 Mobility Policy* and it was realised through a collaboration with the local City Council and with co-funding provided by the European Commission (ibid.: 134). The smartcard based system came into operation on a phased basis between 1995 and 1997, and interestingly - from a resilience point of view, a concept I revisit in Chapter 7 - a "smart-card system was chosen over an on-line system as it was feared that the latter might not function at all in the event of communication failures" (Ibid.: 135). A further sophistication was the contracting out of systematic monitoring and evaluation of the bike share project to a private entity – again, a qualitative difference over the previous generations of PBSSs. The subsequent evolution of PBSSs, according to DeMaio (2009), involved more advanced technologies including electronic-locking racks, telecommunication systems, mobile phone access and on-board computers. He goes on to report that "[b]ike-sharing grew slowly in the following years, with one or two new programs launching annually, such as Rennes' (France) Vélo à la Carte in 1998 and Munich's 'Call a Bike' in 2000" (ibid.).

It was in the mid-2000's that bike sharing schemes expanded substantially in scale as street furniture companies came on board and introduced public-bicycle services as a tool to win valuable contracts for advertisement rights in cities (SPICYCLES, 2009: 10). Outdoor advertising company JC Decaux launched the *Velo'v* scheme in Lyon with 1,500 bikes in 2005 and then *Vélib*[15] in Paris in 2007 with about 7,000 bikes initially (DeMaio, 2009: 43). The Parisian system now has over 20,000 bicycles and 1,800 stations[16] (Mairie de Paris, 2014b). By mid-2011 in Spain alone, "there were 147 public bicycle systems operating in 197 municipalities with 26,289 bicycles and 2,050 docking stations" (Beroud and Anaya, 2012: 285). Meanwhile New York City - which (along with Chicago) had "lowest bike mode shares and, by far, the most dangerous cycling" of the nine large cities in Canada and the USA[17] examined by Pucher et al. (2011a) – launched its own bike share scheme in May 2013 with 6,000 bikes and 330 stations (New York City Department of Transportation, 2013). Intriguingly, the motivation of the NYC Department of Transportation for introducing the system appears to have been based as much on the thinking "it's what successful cities do" (Orcutt, 2011) as it was to add to mobility options for citizens (or so as to catalyse wider bicycle use).

The largest bike-share program in the world at this moment is that in Hangzhou, China[18]. It is run by the Hangzhou Public Transport Group and now has 78,000 bicycles in its bike-share (Meddin, 2014) with plans in place to bring this figure to 200,000 by 2020 (Haixiao, 2012: 171). It is particularly interesting that the world's largest bike-share scheme is now in a city in which, over the previous decade or so, "the focus went to car culture" before a realisation that it is not possible to build enough roads for everyone to have a car (Press, 2011). According to Pucher et al., the deliberate neglect of cyclists in Chinese cities in the early 2000s arose because "relatively slow-moving bicycles... [were] viewed by government officials as a major source of roadway congestion, since bicycles get in the way of faster-moving motorized vehicles" (2007: 403). China is, of course, a fascinating example of 'speed-up': in the case of Hangzhou, the time period between looking to abandon the bicycle since it projected a poor image and suggested the wrong

[15] The name 'Vélib' derives "from an abbreviation of vélo (bicycle) and liberté (freedom), and the initiative to introduce it came from Paris mayor Bertrand Delanoe" MCDONALD, F. 2009. Vandalism experienced by Paris shows the way for Dublin bike supplier. *Irish Times*, 12 September 2009, p.4..

[16] López-Pumarejo points out that the "1,460" Vélib stations was "four times the number of subway stops" in Paris. LÓPEZ-PUMAREJO, T. 2011. Urban Consumers on Two Wheels: Metropolitan Bike-sharing Schemes and Outdoor Advertising in Paris, Montreal, New York, and San Juan. *Transfers,* 1**,** 90-112., p.94.

[17] The cities studied were Montréal, Toronto, Vancouver, Chicago, Minneapolis, New York, Portland, San Francisco, and Washington. PUCHER, J., BUEHLER, R. & SEINEN, M. 2011a. Bicycling renaissance in North America? An update and re-appraisal of cycling trends and policies. *Transportation Research Part A: Policy and Practice,* 45**,** 451-475., p.457.

[18] A city of "total domicile population" of 6.7764 million HANGZHOU MUNICIPAL GOVERNMENT. 2011. *Population & Employment* [Online]. Available: http://eng.hangzhou.gov.cn/main/zpd/English/AboutHangZhou/T305817.shtml [Accessed 16/Jun 2011].

type of modernization (Haixiao, 2012: 163) and then reintroducing it as part of a giant public bike system that is closely knitted into the wider mass transit system has been extremely short. It remains to be seen how initiatives to increase the numbers of public bikes will play out within wider Chinese urban transport policy contexts in which the bicycle has been systematically side-lined.

2.2.6 Moving beyond the third generation

There is now a so-called "4th generation" (DeMaio, 2009: 49-52) of PBSSs being developed, trialled and launched, and the concept appears to be advancing on multiple fronts as discussed also by Beroud and Anaya (2012). Researchers and developers of new systems aim: (i) to increase the efficiencies of operation and distribution of bikes so as to minimise 'assymetries' of movements of bikes (e.g. Martinez et al., 2012); (ii) to integrate more fully with other sub-systems of the transport system such as bus, heavy rail and light rail (Jäppinen et al., 2013, Beroud and Anaya, 2012); (iii) to make the physical installation of bike stations less intrusive in the public realm – i.e. through requiring less excavation of pavements and associated potential disruption to underground services; (iv) to power the stations using solar and other (so-called) renewable technologies; (v) to make schemes accessible to broader demographics – by offering pedal-assist / electric bike options (BBC, 2014, Laker, 2013) and adaptations to bikes to enable those with mobility impairments to use them, by having options of child-seats on board, and by making bike share schemes for children available as introduced recently in Paris (Linshi, 2014); and (vi) to explore new business models (Anaya Boig, 2011, DeMaio, 2009, Bike Sharing Blog, 2011, Beroud and Anaya, 2012).

While the conceptual difference between 4th generation and 3rd generation schemes seems less clear cut than the difference between, say, 3rd and 2nd generation schemes, the overarching trend appears to be towards broadening out the concept so as to appeal to a wider demographic, as well as advancing through more high-tech developments including electronic payment options.

2.2.7 A spectrum of organisational forms

Beroud and Anaya (2012) developed a typology for PBSSs which drew on the work of van de Velde (1999) in comparing organisational forms for the supply of (non-bicycle based) public transport services. Their classification subdivides schemes: firstly, according to whether the initiative originates as (i) a market initiative or (ii) an initiative of a public body; and, secondly according to whether providers and operators are from the private or public sectors. According to this typology, the most common approach is based on public body led schemes, with implementation and operation run as a single private sector contract – as is the case in Dublin (see below). Such

models lie roughly midway along a spectrum with the end points of: (i) having a market initiative without any regulation (beyond existing transport and planning laws) (e.g. *Call a Bike Flex*, Berlin) and (ii) a public authority initiative with a public provider and operator (e.g. Hangzhou Public Bikes). More recently, O'Brien et al. (2014) proposed a classification of schemes based on the geographical footprint and diurnal, day-of-week and spatial variations in occupancy rates. This was developed by analysing data from 38 systems in Europe, the Middle East, Asia, Australasia and the Americas. According to Beroud and Anaya, the

> range of contractual relationships between the scheme promoters, providers and operators demonstrates a range of different goals and different cultures...[and] [t]here remains a lack of research on the impacts of different types of scheme and comparative performance analysis between different models of implementation and operation. (2012: 290)

While my research does not focus on the (somewhat controversial[19]) contractual dimensions of the *dublinbikes* scheme – e.g. by exploring who bears the risk in contracts - it does aim to contribute to elucidating the experiences of its users and to broadening out our conception of what 'a(n) (un)successful scheme' might mean, going beyond the usual metrics (numbers of subscribers, trips per bike per day, collisions, incidents of vandalism etc.).

2.2.8 Evolutionary trends and trajectories

My argument here is that the changing nature of public bike schemes over the last half-century can be characterized by three interweaving 'mega-trends'.

Firstly, there has been an increased 'top-down' (public) institutional involvement in the establishment and regulation of schemes - e.g. in regard to providing (in most cities) *public spaces* for bicycle depots and overseeing public tender processes when private operators become involved – thus contrasting sharply with the grassroots, DIY-ethos, anarchist basis of the 1960s Dutch scheme. Secondly, there has been a steady systematising of the concept and growth in the technological integration of the bicycles with increasingly sophisticated electrical and electronic communications systems – again contrasting with the original relatively low-tech model (or "intermediate-technology"/ "appropriate technology" as discussed by Schumacher (1973)). To run successfully then, the public bike system is now dependent on centrally controlled socio-technical systems[20] – characterized by greater capital investment and requiring connection to electric

[19] See section 2.3.4 below.

[20] As noted earlier, I discuss the meanings of the 'socio-technical system' concept in Chapter 3.

power supply systems[21], broadband systems so as to track bicycles, and to financial/banking/credit card systems and their associated institutional infrastructures - rather than merely the honesty of citizens. The 'more evolved' or advanced systems have- correctly it seems -presupposed that trustworthiness cannot be relied upon. Thirdly, large multi-national outdoor advertising companies such as Clear Channel and J.C. Decaux have become the main drivers of schemes since, as López-Pumarejo argues, "such programs can clean up advertising's image in these green times.... and they make it possible for specific advertising campaigns to gain visual hegemony" (2011: 94)[22]. This PPP model became commonplace with the municipality and the advertising company being co-owners of the systems, as is the case in Dublin as discussed below. A further dimension of this mega-trend is what we might call the 'financialisation' of the public bike system. I use 'financialisation' in the sense of finance encroaching into the realms of everyday life: as van der Zwan puts it, "[s]cholars of [financialisation of] the everyday have abandoned the exclusive focus on the global in favour of an approach that appreciates the diverse ways in which finance is grounded in practices of everyday life" (2014: 111). In the case of many 3rd generation PBSSs, the public's use of the bikes is reliant on the scheme operator drawing in revenue from advertising on outdoor structures which is itself dependent on the wider (global, financial) markets; their use of the bikes is also dependent on credit, accessed by public bikers through the use of credit cards from banks which are of course themselves a core part of global financial markets.

The driving force behind the creation of public bike schemes has therefore changed utterly over the five decades since the concept emerged: from a non-profit to a profit model (or, at least, to a system cross-subsidised by corporate advertising revenues from a parallel venture). However the original idea is recognised by some as having been catalytic in the creation of the larger public bike systems. For example, in reflecting on his re-creation of the original *White Bike Plan* for Glasgow's International Festival of Visual Art in 2010, Angus Farquhar, Creative Director of the Environmental Arts Charity NVA, commented that "[l]ots of mainstream civic bike programmes are emerging but it's hardly ever acknowledged that it all goes back to a small group of Dutch anarchists. I think it's really important to acknowledge those radical roots" (Whiteley, 2010: 46).

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[21] Which are themselves complex systems as described by Hughes (HUGHES, T. P. 1983. *Networks of Power - Electrification in Western Society, 1880-1930,* Baltimore, U.S., The John Hopkins University Press.) and as discussed in Chapter 4.

[22] The entwinement of corporate capitalism with the bicycle – the vehicle which Horton describes as "an iconic object of green discourse" (HORTON, D. 2006. Environmentalism and the bicycle. *Environmental Politics,* 15, 41 - 58.) - presents something of a dilemma for anti-consumerist cycling advocates. One is reminded here of what would seem to be a close connection between Adbusters, "a global network of culture jammers and creatives working to change the way information flows, the way corporations wield power, and the way meaning is produced in our society", and "Carbusters", the Journal of the Car free movement (See for example: ADBUSTERS. 2009. *World Carfree Day* [Online]. Available: https://www.adbusters.org/blogs/adbusters-blog/world-carfree-day.html [Accessed 22/July 2014].)

So, while there have indeed been dramatic transformations of the organisational forms of systems - and of the ideologies held by the bodies implementing them, the net result on the ground is that bicycles potentially usable by most[23] of the adult population have become increasingly available in many cities across five continents[24]. The availability of the public bikes is *potentially* giving improved accessibility for the public to the urban realm, a theme I return to in Chapter 5. This is at least partly consistent with the original aims of the Dutch Provo.

2.3 Public bikes in Dublin

2.3.1 Dublin – a brief introduction to the Irish capital: population, planning and transport

Dublin is the capital of the Republic of Ireland[25]. In 2011 Dublin, when defined as the County[26] of Dublin, accounted for 27.7% of the total population of the state – i.e.1.273M of the state's 4.588M people; while the Greater Dublin Area (GDA), made up of the Counties of Dublin, Wicklow, Kildare and Meath, accounted for 1.804M or 39.3% of the total population. Within the County of Dublin, there are four Local Authority areas: Dublin City(pop. 527,612); Dun Laoghaire Rathdown (pop. 206,261); South Dublin (pop. 265,205) and Fingal (pop. 273,991) (Central Statistics Office, Undated (but assume is 2012)).

In terms of its spatial structure, Dublin is a low-density sprawling city. Its (extreme) suburbanisation was driven, until the 1970s, by a state housing policy (which included also the destruction of the city centre (McDonald, 1985)) but after the 1970s by private property developers (Wickham, 2006a: 47). Over the last two decades, 1991 to 2011, the "highest areas of population growth [on the island of Ireland] were in Counties Fingal (79 per cent), Meath (75 per cent) and Kildare (71 per cent)" (Central Statistics Office, 2014a: 12), which goes a long way towards explaining the trend towards longer commuting distances into the capital over the same period. Furthermore, Leahy has argued in his review of published transport strategies for Dublin over the period 1941 to 2006, that there has been a consistent focus on "prestige capital intensive road and rail elements of plans at the expense of the measures that would provide a citywide integrated transport network" (2010: 7). These two factors - dispersed settlement patterns and unintegrated public transport provision - together with the poor integration of land use and

[23] But not all of the population. See discussions in Chapter 5.

[24] Very interestingly, the Bike-sharing World Map, which aims to show "3rd generation (high-tech), 3rd+ generation and mixed 3rd generation/manned bike-sharing services" displays schemes in North and South America, Europe, Asia and Australia but no schemes at all in Africa: MEDDIN, R. & DEMAIO, P. 2014a. *The Bike-sharing World Map* [Online]. Available: www.bikesharingworld.com [Accessed 21/July 2014].

[25] Referred to as "Ireland" hereinafter in the thesis.

[26] There are 26 counties in the Irish Republic with a further six counties in Northern Ireland.

transport planning[27] - explain the high car dependency levels in Dublin and in the Greater Dublin Area (GDA)[28].

Taking an initial look at the transport data and on the central area of Dublin City, defined by what is known as the 'canal cordon'[29], we can see that the approximate modal shares[30] for how people typically commute[31] into the centre of Dublin are: public transport, 46% (bus, 28%; rail, 13%; tram, 5%); car 37%; walk, 9%; cycle, 4%; taxi, 2%; motorcycle, 1%; goods vehicles 1% (National Transport Authority, 2013c: 6)[32]. Full details are provided in Appendix 2.1.What these figures do not show, of course, are the non-radial (commuting) trips in the GDA and one of the main points about sprawl, is that suburb-to-suburb and 'orbital' trips make up an increasing proportion of the total trips taken[33]. My focus however in this thesis is the centre of Dublin City, hence the use of that data. Note that Chapter 7 (Systems) provides a more detailed review of the available cycling data.

2.3.2 *Witte Fietsen* in Dublin – the first attempt

There is no evidence available to suggest that the Provo's *White Bike* plans found any expression in Ireland in the 1960s – or indeed over the course of the following two decades (Cuffe, 2014b). The earliest organised activity around cycling advocacy and challenges to the domination of streets by motorised transport during that period appears to have been in the late 1970s with the work of Voluntary Services International and their publication 'Give Way to Bikes – A Report on Cycling in Dublin' (1979) as discussed by Ó Tuama et al. (2013)[34].

[27] Helsinki is an example of quite a dispersed city but there is tight integration between land use and public transport provision. See for example: WICKHAM, J. 2006a. *Gridlock - Dublin's transport crisis and the future of the city,* Dublin, TASC at New Island.

[28] According to the National Household Travel Survey Diary 2012, the car is the main mode of transport for those living in the Greater Dublin Area with 64% using it most often (increasing from 52% in 2006), while the bus has decreased during this time period (18% to 12%). MILLWARD BROWN 2013. National Transport Authority National Household Travel Survey 2012. (page 48)

[29] Defined by the almost complete circle formed by the Royal and Grand Canals taken together. See Appendix 7.3.

[30] 'Modal share' (or 'mode share') is a term used in the field of transport planning which means the share or proportion of trips – often commuting trips - taken by a particular mode of transport (i.e. walking, bicycle, motorcycle, bus, tram, train, car etc.). See, for example, CENTRAL STATISTICS OFFICE. 2012b. *Press Release Census 2011 Profile 10 Door to Door* [Online]. Available: http://www.cso.ie/en/newsandevents/pressreleases/2012pressreleases/pressreleasecensus2011profile10doortodoor/ [Accessed 22/April 2015].

[31] Between 07:00 and 10:00 on a mid-week day in November.

[32] This data captures those commuters travelling some distance into the centre of Dublin so the modal share figures shown above will be quite different from those compiled using Census data on where people *reside* – e.g. modal share for people living in Dublin City or Kildare etc.

[33] As explained in the footnote above re the National Household Travel Survey Diary 2012.

[34] It goes beyond the scope of this thesis to study the work of the CTC (Cyclists' Touring Club) in Ireland by way of any campaigning work on behalf of cyclists that may have been done subsequent to their foundation

The history of public bikes in Dublin can however be traced back to November 1996 and a publicity stunt carried out by Green Party Dublin City Councillors to highlight what were perceived as disingenuous car parking and transportation policies and investment decisions of Dublin City Council. Ciaran Cuffe, the then Green Party Transport spokesman, was quoted as stating that the "£3.2 million invested in a new car park behind the Mansion House[35] 'could have provided 16 pocket parks, 64 playgrounds or 32,000 free bikes'" (McDonald, 1996). McDonald continues and, very interestingly, notes that the "city manager, Mr. John Fitzgerald, said he was 'all in favour of innovation and trying out new ideas' but he did not believe that a free bike scheme would work" (ibid.). As part of the publicity stunt a small number of white bikes was released onto the streets of Dublin to present a flavour of an alternative approach to transport planning (Figure 2.2 below). These were, according to Cuffe as he looked back on the stunt, inspired by "the Dutch scheme, and also the La Rochelle France scheme" (Cuffe, 2014b). The 'Stop Mad Car Disease' placard shown below is a play on 'Mad Cow Disease', an issue which was high on the political agenda in Ireland in 1996 (see, for example, Agnew, 1996). The purpose of the stunt was to stir the imagination of a Local Authority which had become renowned for overseeing or even facilitating "the destruction of the historic city's built environment" since the early 1960s (McDonald, 1985: 5). Anyhow, the white bicycles disappeared quickly as did the idea of introducing public bikes in Dublin until the following decade.

2.3.3 Introducing *dublinbikes*

Dublin City Council announced in 2006 that "a deal had been made with advertising company JC Decaux: free bikes for the city in exchange for free advertising space" (Boland, 2009), with Cllr. Andrew Montague widely credited for the idea and the (eventual) introduction in September 2009 of the *dublinbikes* scheme (Rubbo, 2010)[36]. The scheme initially consisted of 450 bicycles at 40 stations located within the Royal and Grand canals (i.e. within what is known as the 'canal cordon') and this was expanded over the following year to 550 bicycles at 44 stations (*dublinbikes*, 2011), as shown in Figure 2.3 below. The geographic area covered by the scheme at this juncture was approximately 3.5km (north to south) by 2.5km (east to west). In November 2013, work started on the current phase of the expansion plan[37] that brings a further 950 bicycles (meaning a

in 1932 (CTC IRELAND. Undated (possibly 2003). *About us* [Online]. Available: http://homepage.eircom.net/~ctc/ [Accessed 22/July 2014].)

[35] The Mansion House is the official residence of Dublin's first citizen, the Lord Mayor. DUBLIN CITY COUNCIL. 2014d. *The Mansion House* [Online]. Available: http://www.lordmayorofdublin.ie/lordmayor/Main/About_ManHse.htm [Accessed 16/July 2014].

[36] The processes around the introduction of the public bike scheme are explored in depth in Chapter 7.

[37] For details of the full (5000 bike) expansion plan, see DUBLIN CITY COUNCIL 2011b. dublinbikes Strategic Planning Framework 2011-2016.

total of 1,500) and a further 58 stations (meaning a total of 102 stations) to the system (Kelly, 2013b) – see Figure 2.4 below.

Figure 2.2 – Green Party launch of White Bikes free bikes in Dublin[38] (Cuffe, 1996)

As is the case with many other 3rd generation systems (Shaheen et al., 2012a: 191), the first period of half an hour of bike use is free with the rental charge increasing progressively for longer periods. As of 27th June 2014 and according to the website of the (Coca Cola ZERO[39]) *dublinbikes*, there are "42,000 long term subscribers" and the busiest usage day so far involved "11,096 rentals on 12th June 2014" (J.C. Decaux and Dublin City Council, 2014a). Ginty (2014a), drawing on data published on the *dublinbikes* website, indicates that the "[a]verage bike rotation rate for year to date"[40] was 8.39 trips per bike per day. According to Fishman et al. (2013) - drawing on his own previous studies, on data discussed by Rojas-Rueda et al. (2011a) and on further data from 'The Bike-Sharing Blog' - global usage rates typically "vary from around three to eight trips per bicycle per day". Therefore, there appears to be some validity to the (oft-quoted) statement that the *dublinbikes* scheme is "[o]ne of the most successful shared bikes schemes in

[38] Participants included: Kieran Byrne (owner of Square Wheel Cycleworks – furthest on left); then and current Councillor David Healy (Fingal County Councillor – 2nd from left); then Councillor Claire Wheeler (Dublin City Council – 3rd from left), John Twomey (Dublin Cycling Campaign – 4th from left); then and current Councillor Ciaran Cuffe (Dublin City Council – on the far right wearing the suit and holding the banner).

[39] From the end of June 2014 "the instantly identifiable blue bikes will be called (officially at least) the Coca-Cola Zero dublinbikes" after Coke's no-sugar brand Coca-Cola Zero "paid €2 million for a three-year sponsorship of the successful Dublin bike share scheme" HARRISON, B. 2014. Cyclists push for fizzy drink as Coke wheels out campaign. *Irish Times*, 26/June 2014.

[40] As taken on 25th Nov, 2013 (as per Ginty, above).

Europe" (J.C. Decaux and Dublin City Council, 2014a). However, we must also remember that the original scheme is (or, at least, was) quite small by international standards[41].

2.3.4 Criticisms of the scheme

At this point in the story, it is worth pointing out that in the year or so ahead of the launch of *dublinbikes*, the scheme was criticised on multiple fronts both by media commentators (e.g. Boland, 2009) and by bloggers from the planning / architecture professions (see, for example, Anonymous, 2008). The criticisms and allegations covered a battery of issues.

Firstly, critics (e.g. Anonymous, 2008) focused on the apparent exclusion of City Council politicians (and the public) from consultations and negotiations around the municipal contract with JC Decaux[42]. Secondly and relatedly, critics highlighted the poor deal struck by the Council – in comparison with its counterpart in Paris – in terms of the (small) number of public bicycles that Dublin was receiving in return for advertising space: McDonald (2009), reported that the original Parisian contract gave JC Decaux a 10-year licence to erect 1,600 advertising panels in return for running the scheme (which included the 20,000 bikes at 1,250 stations)[43]. Thirdly, some architects pointed towards the anti-democratic nature of the planning applications around the scheme "by virtue of a single project being split into 120 applications [thus meaning] that to comprehensively appeal the scheme to the Bord[44] would have cost €30,000" (Anonymous, 2008). Forth, the same critics pointed out that the (large and obtrusive) advertising billboards were being erected in "less well-healed areas [only]; no application was lodged for [the more salubrious areas of] Donnybrook, Ballsbridge, Sandymount, or Rathgar[45]" (ibid.). Fifth, it was argued that it was unwise to introduce public bikes ahead of implementing a programme of additional cycleways (as Paris had allegedly done) and that Dublin city was still a hostile environment for inexperienced cyclists - and therefore the public bicycles would not be used and/or (serious) accidents were a strong possibility (ibid.). Sixth, there were complaints that the City received aesthetically dubious and dangerous (from a road safety perspective) advertising billboards and pillars (many) months ahead of the arrival of the bikes (ibid.). Finally, there were additional predictions that the bicycles were likely to be stolen and/or vandalised with McDonald (2009) reporting that by mid-2009 in

[41] The original DB scheme consisted of 450 bikes and 40 docking stations. For comparison, the public bike scheme in Lyon in France has 4000 bikes and 340 stations (GRAND LYON URBAN COMMUNITY. 2014. *Vélo'v stations* [Online]. Available: http://www.velov.grandlyon.com/Stations.15+M52087573ab0.0.html [Accessed 02/Aug 2014].)

[42] "France's greatest outdoor advertising agency", as described (wryly) by LÓPEZ-PUMAREJO, T. 2011. Urban Consumers on Two Wheels: Metropolitan Bike-sharing Schemes and Outdoor Advertising in Paris, Montreal, New York, and San Juan. *Transfers,* 1**,** 90-112. (page 91)

[43] I discuss the Dublin deal in a little more detail in Chapter 7.

[44] An Bord Pleanála, the planning appeals board: AN BORD PLEANÁLA. 2007. *Home* [Online]. Available: http://www.pleanala.ie/ [Accessed 29/Sept 2014].

[45] These are some of the more salubrious districts on the south side of Dublin.

Paris "nearly all the original bicycles have been replaced at a cost of €400 each. Dedicated JC Decaux staff recover at least 20 abandoned Velib bikes per day and also carry out some 1,500 repairs on a daily basis to keep the fleet in working order".

Figure 2.3 – dublinbikes (44 docking station) 'zone' (J.C. Decaux and Dublin City Council, 2011)

Most of these criticisms faded very quickly from the public discourse once the scheme was up and running and well-used, a story I return to in Chapter 7.

The main criticism that has remained is that (some / many) users of the bikes appeared to routinely break traffic laws and make the life of pedestrians more uncomfortable – with the following tabloid tirade appearing in June 2011

> And while the recent Dublin Bikes scheme has opened up that mode of transport to a wider audience -- even businessmen who have been newly converted to two-wheeled transport seem to consider this a chance to indulge their naughty side, and break laws that they would never do as respectable, law-abiding drivers... Every day of the week there are near-misses in Dublin city centre caused by cyclists flouting the rules of the road. I've personally witnessed a pedestrian being thrown into the path of an oncoming car after being hit by a cyclist coming the wrong way up a one-way street. And one day it will result in a death. (O'Doherty, 2011).

Additionally, some negativity around the scheme has recently arisen in response to the rebranding of *dublinbikes* as "Coca-Cola Zero *dublinbikes*" in June 2014 (J.C. Decaux and Dublin City Council, 2014b): this focused on the inappropriateness of a corporate soft-drinks giant seeking to maximise publicity for its brand using what is generally perceived to be a healthy mobility option[46]. While in one sense, this sponsorship deal could certainly be understood as a stark betrayal of the principles of Provo, in another sense Coca-Cola's appropriation of the scheme might be interpreted as conferring the quintessential standard of normality onto the public bikes and, hence, to an extent at least onto urban biking. From Coca-Cola's perspective, we might observe how, quoting López-Pumarejo (2011), "[t]he resilience of capitalism is due in part to its talent for absorbing what opposes it".

[46] It would seem fair to say that the strength of feeling amongst the public on this point, judging by the social media based responses to a recent article on this topic, is weak to moderate: most of the social media active public appear to accept Coca Cola's sponsorship. See HOSFORD, P. 2014. Dublin Bikes scheme signs €2 million sponsorship deal with Coke Zero. *thejournal.ie*, 18 June 2014, p.02/August 2014. However, on the "reliance on advertising hoardings and sugar drink companies to subsidise the [*dublinbikes*] project", Cllr. Ciaran Cuffe recently said that "it is the equivalent of running cake sales to pay for the running costs of motorway network, and it is wrong to have to rely on consumerism and sugar to get people around in a healthy fashion." CUFFE, C. 2014a. *Cllr. Ciaran Cuffe's address at DCC's Annual Lecture during EU Mobility Week* [Online]. Available: http://www.dublincycling.ie/cycling/cllr-ciaran-cuffes-address-dccs-annual-lecture-during-eu-mobility-week [Accessed 23/Sept 2014].

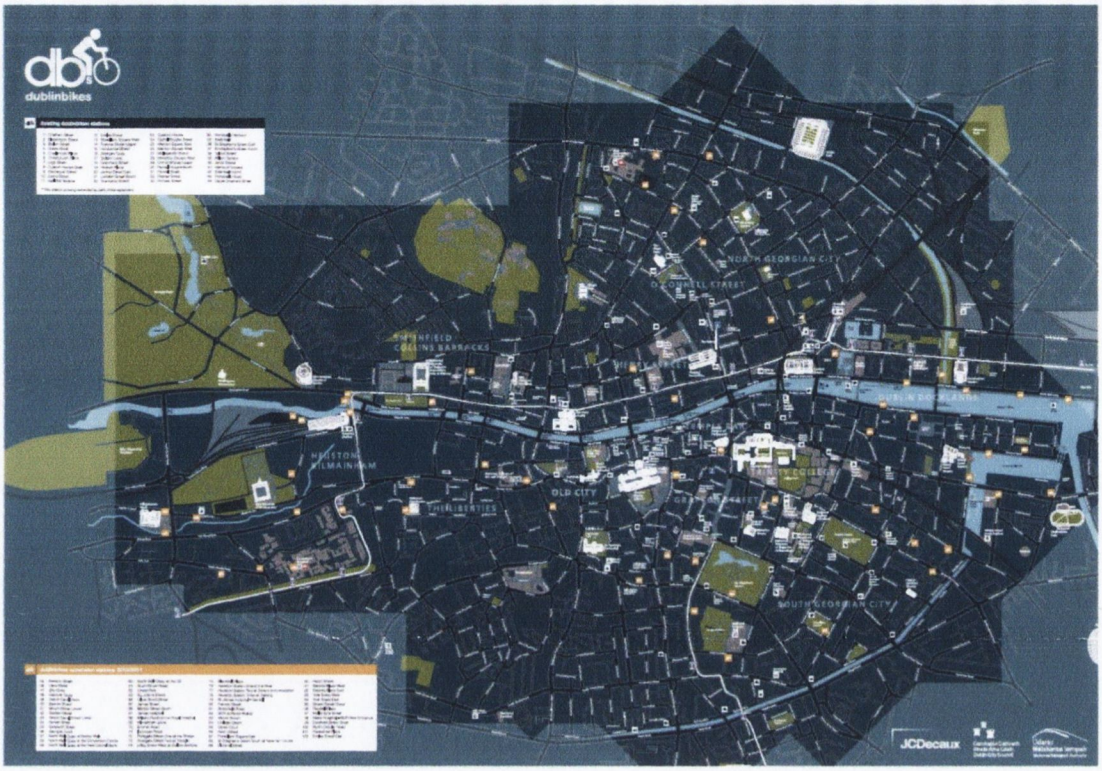

Figure 2.4 - dublinbikes expanded scheme 2013/14[47] See Appendix 8.1 for large (A3) version.

2.3.5 Scholarly interest in *dublinbikes*

As well as generating intense interest from journalists[48] since it was announced that the *dublinbikes* were coming to Dublin, the system has also been the subject of quite intense scholarly interest. Early work by Mooney et al. (2010) used a GIS perspective to examine the usage and flow patterns of *dublinbikes* and they clustered *dublinbikes* terminals into geographically relevant groups – those near train stations, those within 300 meter walking distance of each other, and those at major street intersections. Other scholars such as Murphy (2010) and O'Neill and Caulfield (2012) have examined the relationship between *dublinbikes* and public transport use with the latter scholars finding that proximate public transport stops and stations positively influence activity at *dublinbikes* stations.

Most recently, Murphy and Usher (2013) demonstrated that the vast majority of users of the scheme are male (78%), relatively young (approximately 80% of users are between 25 and 48) and come overwhelmingly from middle and upper-middle-income backgrounds. Intriguingly, their

[47] Figure used with permission provided by Dublin City Council

[48] A quick search of the Irish Times database using the term "dublinbikes" for the period 1/Jan 2006 to 2/Aug 2014 and using the Proquest platform (PROQUEST LLC. 2014b. *Searching* [Online]. Available: http://search.proquest.com/ [Accessed 02/Aug 2014].) yielded 99 results – i.e. stories either about or making reference to the *dublinbikes* scheme. See also further discussions on the media dimension in Chapter 7.

work also showed "that individuals who use the scheme and are drivers feel that their awareness of cyclists on the road has been increased when they return to driving" (ibid.: 23) – a question I examine in my research and discuss further below (in section 2.4.3). Deegan (2011), on the other hand, compared the use and knowledge of safety equipment by *dublinbikers* as against owner cyclists[49].

2.4 The wider scholarly focus on public bikes and emerging thesis questions

Scholarly attention has recently turned to public bikes in general with Fishman et al., in their synthesis of publications, positing that the "peer-reviewed literature [on public bikes]... is limited and that there are important questions yet to be examined in detail" (2013: 162). In this final section I briefly review the main spheres of enquiry pursued by public bikes scholars, I highlight those spheres which are still under-explored and I begin to carve out the questions that matter for my research.

2.4.1 Environmental, public health and economic impacts of public bikes

Some of the (grey) literature presents a largely uncritical and unjustifiably positive assessment of public bikes, especially in regard to their (positive) environmental impacts. For example, DeMaio claims that "bike-sharing has had profound affects [sic] on creating a larger cycling population, increasing transit use, decreasing greenhouse gases, and improving public health"(2009: 43). The assertion that the impact on reducing greenhouse gas (GHG) emissions has been "profound" is not supported by the evidence, at least in terms of *directly* reducing emissions: Fishman et al, in drawing on the work of other researchers and reports – e.g. Transport for London (2010) and Shaheen et al. (2011) on China's Hangzhou Public Bicycle – conclude that mode substitution from car to bike share is low (2013: 150-154). In regard to the *dublinbikes* scheme, Murphy and Usher (2013) showed that "19.8% use it as a substitute for the car" while the research of Murphy (2010) showed that just 8% previously used car or taxi for the journeys now taken by *dublinbikes*[50].

Meanwhile Beroud and Anaya (2012) point to the fossil energy consumption associated with redistributing bikes using motor vehicles (especially uphill as users tend to cycle downhill more often) and these energy costs must be off-set against the (small) energy savings arising from shifts

[49] An issue I revisit later in the thesis.

[50] Note (i) that the research carried out by Usher (in 2013) was a collaboration with *Enda* Murphy, while the 2010 research was carried out by *Hilary* Murphy; and (ii) that Hilary Murphy asked *dublinbikes* users specifically if the journey taken was a 'new or different journey' as opposed to a substitution from another mode.

to public bikes from motorised vehicles. In short, the amounts of GHG saved are small. They also point out that systems are not as self-managing as often assumed and the redistribution of bikes is labour- as well as energy-intensive, an issue addressed by other scholars such as Nair et al. (2013). Beroud and Anaya also raise the "issue of the manufacture and recycling of bicycles and equipment used in schemes... and the energy used for docking stations, which is frequently from solar panels" (2012: 295).

Research on the modelled public health (dis-)benefits of introducing PBSSs is just beginning to emerge with Woodcock et al. concluding that "London's bicycle sharing system has positive health impacts overall, but these benefits are clearer for men than for women and for older users than for younger users" (2014: 1). Rojas-Rueda et al. (2011b) have also argued, on the basis of their study of Barcelona's *Bicing* scheme, that the "health benefits of physical activity from cycling using the bicycle sharing scheme... were large compared with the risks from inhalation of air pollutants and road traffic incidents", but Fishman (2011) maintains that this research used a "fundamentally flawed assumption related to the proportion of *Bicing* trips replacing car journeys" thus invalidating the research results. In terms of the economic (dis-)benefits of introducing PBSS, the net benefit (or cost) will be dictated by what is and is not taken into account in the cost benefit analysis or economic appraisal calculations and what assumptions are used (Beroud and Anaya, 2012: 298). On this point, one is reminded of the observations of Mackie who noted that the economic appraisal of transport projects

> has always been a controversial tool, generating accusations of unacceptable principle, improper application, inadequate evidence base and bias. One early application was to the appraisal of the proposed third London Airport where a critic labelled the project appraisal as "nonsense on stilts" and the method was defended against accusations of being "bastard science and/or insidious poison in the body politick" (Self, 1970, Williams, 1973). (Mackie, 2010: 5)

In conclusion then, it seems from the work carried out thus far that public bikes are not making a significant difference to sustainable transport mode share, to public health or to the environment, and the economic gain of such schemes "will depend on initial assumptions... [and] will vary by city" (Beroud and Anaya, 2012: 298).

2.4.2 The social dimensions and experiences of being a public biker

Shaheen et al. have commented that research on the "social benefits of bikesharing, particularly before-and-after behavioural trends, is limited" (2012a: 198). I support that observation but would go further. My review of the literature reveals that what has not been explored by scholars thus far is the significance, in social terms, of the substitution to public bikes *particularly when this switch is from other 'sustainable modes'*. So it continues to be unknown, for example, what value (if any) is attached to new experiences by those who have 'switched' from, say, motorised public transport or walking to public bikes. Intriguingly – and as noted in a footnote above - the research of Murphy (2010) revealed that of her *dublinbikes* users surveyed (251 in number), 37% "are making new or different journeys which they did not make before Dublin Bikes was introduced for one reason or another". These journeys, which are not simply 'switches from other modes', are largely unexplored in the public bikes literature - perhaps because of the traditional dominance of values associated with a transport studies / traffic engineering approach to movement over a social scientific approach.

So, my research aims to respond to these gaps in our collective understanding of the nature of the experiences of public bike journeys, be they substituted journeys from (so-called)'sustainable' or 'unsustainable' modes on the one hand, or new journeys on the other.

2.4.3 Looking beyond individual journeys – considering the system and its context

Also of intrigue to me is the assertion of Beroud and Anaya that the "presence of public bicycles in the streets contributes to the visibility of cycling and cyclists and this helps to enhance the perceived 'legitimacy' of cycling which may also lead then, for example, to reduced motor traffic speeds creating an even more appropriate environment for more general, non-public bicycle scheme-related cycling" (297). This string of claims– while very alluring to someone interested in shifts in sustainable transport - is however unsupported by any evidence in their paper and thus requires more serious investigation. Relatedly Fishman et al. (2013) raise the notion that public bike use may act "as a catalyst for the take up of private [bike] riding" but note that this has not yet been critically examined.

There are though wider processes still that scholars have begun to bring to the surface in connection with the arrival of public bikes. Tironi (2011c), drawing on the work of Graham and Thrift (2007) and of Latour, reminds us about the employee skills and the physical facilities required for providing reliable mobility for users, while Beroud and Anaya raise the issue of the potential for increased conflicts with pedestrians "as it did with walkers in Barcelona" and the call for more training of cyclists to be made available (2012: 296).

In this thesis I aim to address these hypotheses through exploring the wider processes that the *dublinbikes* scheme may or may not have catalysed or triggered.

2.5 Chapter conclusion

There are distinct gaps in our knowledge of public bike schemes, with much of the research thus far conducted adopting a more traditional transport studies approach and often with a narrower focus on 'modal shifts'. Meanwhile the wider social effects of introducing public bikes are still poorly understood but with a number of hypotheses beginning to be posed and now requiring serious attention. These hypotheses raise further questions still in regard to the wider 'systems effects' of introducing these schemes.

So in the next chapter, I engage with a number of theories as I delve further into the public bike phenomenon and by the end of that chapter, I state more definitively what the exact aims and objectives of my research are.

Chapter 3 – Theory and Literature Review

3.1 Introduction

I finished the previous chapter by proposing several ideas on how the public bike scheme might be playing a role, firstly, in reconfiguring urban life and urban experiences and, secondly, in prompting broader structural or systemic changes in the city. This chapter now gets to the heart of the conceptual arguments undergirding my investigations.

In the first section (3.2), I locate my study within the transport studies and transport history fields and I discuss how 'freedom', or a number of different versions of the concept, has been one of the overriding themes in experiencing – and indeed in advertising - new transport technologies over the ages. This immediately prompts the question as to what versions of freedom might we associate most closely with being a public biker? Secondly (3.3), I consider theories around the multi-sensory, emotional and sociable experiences of travel, and I generate a number of propositions on the public bike experience. Then thirdly (3.4) and moving beyond the journeys, I consider ideas from the spheres of technology studies and transition theory and I generate new questions on the processes by which the public bike system might nestle into place and into the prevailing social and cultural orders.

Thus I take a micro and macro view of my subject and I then state my formulated research questions at the end of the chapter. This leads the reader into Chapter 4 (Methodology).

3.2 Mobility freedoms

I begin my discussion by, first of all, returning to the historical development of cycling that I commenced earlier (in Section 2.2.2) although we will see that 'development' in the post-war decades was really generally synonymous with 'decline' (at least in Europe). Having covered (very briefly) this broader historical context, I then begin to unpack the notion of 'freedom' and discuss the various versions of the concept that are historically associated with different transport technologies.

3.2.1 Shifting transport discourses, post WWII

In the decades after World War II, the bicycle did not feature seriously in most 'Western' countries' transport plans: the future was very much about automobility. This was as much the case in Australia (Davison, 2004) as it was in Sweden (Blomkvist, 2004); while in Britain in the early post-war years, as McGurn recounts, although "private motorists constituted only a minority of transport users their aspirations dominated" (1999: 165). However as car numbers multiplied rapidly, traffic congestion grew and soon came to be seen as a national problem. In response, the *Traffic in Towns* report of Colin Buchanan (Great Britain. Ministry of Transport, 1963) was produced and this reinforced an emerging trajectory towards privileging individualised motorised transport. Critics such as Hillman (1983) and Gunn (2011)maintained that "the report treated all other modes of urban transport including motorcycles, bicycles, buses, and pedestrian movement as an adjunct to the car, rather than as a serious alternative to it" (SKM Colin Buchanan, 2013: 16) and over the following three decades, the policy discourse in the UK remained firmly focused on motordom. According to Aldred, drawing on Goodwin et al. (1991), this discourse only began to change in the 1990s when "with growing environmental awareness alongside continuing congestion, academics, policy-makers and politicians questioned the logic of building more roads to meet forecast demand" (2012b: 98). The discourse then began to shift, albeit unevenly and slowly, towards traffic management, public transport and (to some degree) cycling.

In regard to academic attention to cycling, Horton et al. (2007) argue that from the 1990s onwards there was increasing scholarly interest in utility / transportation cycling (as against sports / leisure cycling)[51] from engineering, design and planning perspectives, with McClintock making several major contributions (McClintock, 1992, McClintock, 2002). Further serious work has been carried out by Pucher from a urban planning and transport planning perspective (e.g. Pucher and Buehler, 2008, Pucher et al., 2011b), Parkin (2012b), Pooley (2011b) and Cox (2010), for example. For many of these scholars – and contributors to policy – the overarching question is how to prompt a modal shift away from the private car with cycling seen as a core part of the new 'sustainable mobility paradigm' (Banister, 2008). Bound up with this scholarly work on policy is the literature on cyclists' road safety issues[52] - e.g. Parkin and Meyers (2010) on cycle lanes and proximity of cyclists to motor traffic and, in a Dublin context, the recent contributions of Lawson

[51] Mullan's recent work looks at bridging this apparent dichotomy by examining the practices of cycling for transport among those who already cycle for leisure and fitness: MULLAN, E. 2012. Swapping the Lycra for the suit: determinants of cycling for transport among leisure cyclists in Ireland. *International Journal of Health Promotion and Education,* 50, 229-237.

[52] As Horton et al. pointed out in 2007, the issue of bicycle helmets has generated a huge amount of attention. The research focus on this controversial topic appears to have continued unabated in the years following Horton et al.'s comments: see for example GOLDACRE, B. & SPIEGELHALTER, D. 2013. Bicycle helmets and the law. *BMJ,* 346.

et al. (2013b) on the determinants of perceptions of safety among cyclists and Short and Caulfield (2014) on the under-reporting of cyclist collisions

3.2.2 Freedom to 'go anywhere, anytime' – cars, mass transit and bicycles

Car advertising in the 'transition decade' of the 1920's firmly linked the car with promises of individual mobility, flexibility and the ability to synchronise disparate activities across space and time (Laird, 1996: 812) – in other words, freedom - and this was a constant theme of car advertising for many decades[53]. Similarly, according to Gunn, "[f]or Colin Buchanan, the car was a 'fascinating possession' whose appeal lay in the freedom it offered to 'go anywhere'" (2011: 529)[54] and he deduced that British cities needed to be redeveloped "for the motor age over the next fifty years [i.e. from 1963]" (ibid.: 531). This motorised freedom to go anywhere, anytime, contrasted sharply – or at least did so initially - with the way the tram trammelled. While Naukkarinen elaborates on the many positives of tram travel, he acknowledges that the tram

> is tied to the rails, fixed routes and timetables. In this sense the tram lacks the freedom of the individual car driver or the pedestrian. One cannot simply go anywhere with it. In addition, as the tram is often owned and run by the city and calls for heavy investments, it is not easy for an individual to influence it – its appearance, routes, furniture, timetables, etc. One has to settle for using the tram under given conditions. (2003: 254)

To be free or to be trammelled represented the essential difference then between motorised, individualised mobility and mass transit. For the latter, the freedom to move wherever and whenever one wants is tied to the geographical density of PT networks, the frequency of services (including night-time services) and one's knowledge of the system. Crucially though the immobility associated with car travel has come under the spotlight of several scholars. While Hagman (2006) focuses in on the restriction on car drivers' autonomy as they are forced to find free parking spots, Fincham points out, in his examination of the autonomy of the urban cycle courier, that while the "deliverer of automobility" – the car – "embodies the spirit of freedom, privacy, movement, progress and autonomy", it is of course the source of immobility as well (2006: 209). The related theme of differentiated access to mobility is developed more broadly by Sheller and Urry in their elaboration of the 'new mobilities paradigm'. They argue that "[r]ights to travel are highly uneven and skewed" (2006: 210) at both micro and macro levels - or, as Cresswell puts it, mobility is wrapped up in power and politics: "some people have it and some

[53] Wright and Egan discuss the intriguing idea of 'de-marketing the car' as a status symbol and a convenient accessory of modern life – an antidote to the norms of advertising. WRIGHT, C. & EGAN, J. 2000. De-marketing the car. *Transport Policy,* 7, 287-294.

[54] Who himself draws on a diverse array of newspaper articles.

people don't" (Mobile Lives Forum / Mike Brulhardt, 2014). Of course, the complete antithesis of the freedom to be mobile associated with automobility is the massive toll of disability and death associated with road traffic 'accidents', now recognised by the World Health Organisation as "a global public health and development concern" (2013: v)[55]. This darker side of automobility has occupied the minds of social scientists such as Erskin (1996) and Dennis and Urry (2009), while road-kill of non-humans has received some attention both by poets (Williams, 1991) and scientists of various hues (Santos et al., 2011, Michael, 2004, Coffin, 2007).

Before discussing further aspects of freedom, I will briefly allude to some of the multiple (historical) associations between the bicycle and individualised freedom. It is well documented that the bicycle became a vehicle of liberation from domesticity for European and North American women in the late nineteenth century (McGurn, 1999, Mackintosh and Norcliffe, 2007, Horton, 2013, Griffin, 2006), while in Japan in the early days of the twentieth century, Steele argues that the bicycle emerged as *the* symbol of modernity. One consequence of this democratization of bicycle use was that

> [o]rdinary people in cities, towns and villages and even in remote mountain hamlets could reach more places and do things more quickly than before. In this sense, the bicycle was responsible for a revolution in both physical and social velocity... The bicycle [also] promoted this modern value [i.e. independence] by magnifying the powers of individuals and allowing them to go when and where they willed... Bicycle citizens were agents of change. (2010: 203-204)

To bring us up to the present, the research of Freudendal-Pedersen (2014) again highlights the "flexibility, autonomy and freedom" felt by Copenhagen cyclists as they tell their stories about their everyday mobilities.

Before moving on to the next section, I will briefly mention the theme of children's (lack of) freedom to cycle and walk. The classic study of relevance here is that of Hillman et al. (1990) and their examination of children's (diminishing) independent mobility over a twenty year period in the UK and Germany. More recently though Mikkelsen and Christensen (2009) combined traditional ethnographic methods with newer technologies to take a more critical view of the same notion and they concluded that there needs to be a reconsideration of "any fixed notion of

[55] This report shows that 1.24 million people were killed on the world's roads in 2010. WORLD HEALTH ORGANIZATION 2013. WHO global status report on road safety 2013: supporting a decade of action. World Health Organization.

what dependent or independent mobility means for children" (ibid.: 55). This final point on children's mobility prompts the question as to if or how children are accommodated with the new form of mobility that is public bikes – a question I explore in Chapter 5 in regard to the *dublinbikes* scheme.

3.2.3 Freedom to move – ownership and costs

Tightly entwined with the types of freedoms associated with different travel modes are considerations around ownership and the costs of owning or accessing technologies. Scholarly historical work dealing with the costs of becoming motorised for the first time include the work of Bauer (2013). His 'motorisation focus' was though motorbikes rather than motorcars, and his argument is that the low levels of affluence in Germany in the mid-1920s and 1930s meant that the motorbike was "the most affordable motorised form of individual transport for low- and medium income groups" (ibid.: 113) and this made Germany the world's largest motorcycle producer, exporter and user. Almost half a century later and writing at the time of the oil crisis, Illich famously argued that the "model American male" devotes more than 1,600 hours per annum to his car – to include the time travelling, looking for parking spaces and, crucially, the time working to pay for the car, insurance, gasoline and maintenance etc.– and this all amounts to "1,600 hours to get 7,500 miles: less than five miles per hour" (1974: 10).

Forty years on again, discussions around the high costs of car ownership have resurfaced in response to what appear to be emerging cultural shifts from ownership models to use-only models of accessing 'private' cars, at least in many European and North American cities. On this shift, Thompson and Weissmann argue in a US context that "[i]f the Millennials are not quite a post-driving and post-owning generation, they'll almost certainly be a less-driving and less-owning generation" (2012). They also suggest that, as well as the US recession, "it's highly possible that a perfect storm of economic and demographic factors—from high gas prices, to re-urbanization, to stagnating wages, to new technologies enabling a different kind of consumption—has fundamentally changed the game for Millennials" (ibid.). This is a crucial point for public bike schemes which operate on the model of the non-ownership of the vehicle.

Turning for a moment to the costs of accessing public transport, a number of scholars have examined the effects of introducing zero-fare public transport policies (Fearnley, 2013, Cats et al., 2012). Fearnley concludes that, intriguingly, "free public transport can greatly improve public transport modal share" but this is "not by taking passengers from other motorised modes, but through the generation of substantial amounts of new travel and by substituting walk and cycle trips" (2013: 86).

The questions that these studies raise for me– while noting also the work of other public bikes scholars, e.g. Fishman et al. (2013)[56] -relate to the ways in which cheap access to bicycles might (re-)shape urban life for bike-share users. Additionally, just as there are barriers besides financial for members of the public to use individualised motorised transport (e.g. driver licences), we might ask what barriers exist to prevent full public access to 'public bikes'?

3.2.4 Freedom to choose one's own company

The final dimension of the freedom of(urban) transport I want to mention here is the (in)ability of the traveller to take journeys with whoever he or she wants. In his intriguing study of passenger experiences on the *Subte* underground lines of Buenos Aires in the days and decades after its opening (i.e. 1913-1944), Singh highlights not only the intense congestion that arose from excited crowds using the new system, but also the critiques of writers such as Estrada and Arlt which bemoaned the highly industrialised nature of the system which "turn[ed] the passenger into an automaton" (Singh, 2014: 110). This critique of early mass transit applies, of course, to modern day metros, trams and buses and it highlights one of the most alluring aspects of car travel: the ability to choose to be alone or to choose one's company. The more extreme (helicoptered) version of individualised travel is now coming under the scrutiny of scholars examining elite mobilities (Birtchnell and Caletrío, 2013). I revisit this argument in the next section (3.3 – Journey Experiences) and begin to raise questions on the nature of journeying on one's own – or with others perhaps – on public bikes.

3.2.5 Freedom and public bikes?

In summary, while there has been a lot of scholarly attention on the ways in which various modes of travel give rise to experiences of particular versions of freedom, there has been little work on the types of freedom that public bikers might enjoy. This is all the more intriguing given the name assigned to the largest public bike scheme in Europe, Paris's *Vélib'* – 'Bicycle freedom'.

[56] One of the benefits of bike share programs that they highlight is individual financial savings. Here they draw on the work of SHAHEEN, S., GUZMAN, S. & ZHANG, H. 2010. Bikesharing in Europe, the Americas, and Asia. *Transportation Research Record: Journal of the Transportation Research Board* 159-167.

3.3 Journey experiences

3.3.1 The multi-sensory approach

Transport studies scholars have traditionally concerned themselves with the more quantifiable aspects of travel such as costs, distances, durations and routes – see for example University of Ulster (2014)– and with energy consumed and emissions (of particulates, CO_2, NO_x, etc.) produced per kilometre travelled (e.g. Chan et al., 2002). What was not considered so seriously was what went on between the origin and destination points: the journey itself was seen as dead-time - purely a cost - something to be minimised.

The mobilities perspective, on the other hand, posits that the meanings and experiences of journeying matter (Sheller and Urry, 2006: 213-214) and scholars -such as Urry (2006), Laurier et al. (2008) and Pearce (2012) on driving, Wilson (2011) on buses, Naukkarinen (2003) on trams, Watts (2008) on trains and Middleton (Middleton, 2010, Middleton, 2011) on urban walking - have turned a critical eye to the journey itself. As Cresswell puts it, mobilities is about "more than" getting from A to B and "we want to understand what is the 'more than'" (Mobile Lives Forum / Mike Brulhardt, 2014). In regards to non-motorised movement, the *Cycling and Society* edited volume (Rosen et al., 2007) was a key publication as it deepened and broadened social scientific scholarly interest in ('everyday') cycling and this has been followed by work on 'cultures of cycling' and 'cycling identities' by Aldred (Aldred, 2010, Aldred, 2012c, Aldred, 2013a), Spinney (Spinney, 2010, Spinney, 2011, Spinney et al., 2011) and Vivanco (2013). Having said that, Forsyth and Krizek argue that "[t]here is scant literature commenting on the experience of cyclists as they travel, such as how facility design can heighten social interaction" (2011: 542) and they posit that "research on cyclists' perceptions and experiences is an important area for future work" (ibid.: 533).

So, just as Naukkarinen argues that the tram - "the whale of the urban sea" (2003: 257) - engages the senses in its own special way, over the following pages I examine the distinctive multi-sensory and emotional experiences associated with an array of (urban) transport modes before posing equivalent questions on the public bike experience. My approach thus supports the challenge to "ocular-centricity" and sensory reductionism that Adams and Guy (2007) rally. Furthermore, while I am conscious here also of the position of Jungnickel and Aldred that "sensory awareness is messy and complex [and] the senses cannot be separated and compartmentalized" (2013: 247), I do set out to separate out distinct sensory experiences in my work. I acknowledge their view that "[t]he 'feeling' of a city is multi-sensory and dynamic" (ibid.) but I do think that by seeking to

separate the senses, it forces one to pay particular attention to the multiple dimensions of the journey.

3.3.2 Observations on the move

In his cultural history of the influence of early railways on modern society, Schivelbusch posited that passengers in 19th century trains developed new perceptions compared to those travelling on far slower stage coaches and he maintained that this was

> not a picturesque landscape destroyed by the railroad...[rather, it was] an intrinsically monotonous landscape brought into an esthetically pleasing perspective by the railroad...the view from the train window [was] as an evanescent landscape whose rapid motion made it possible to grasp the whole (1986: 60-61).

For Schivelbusch then, the railroad created a disconnect with what was happening immediately beyond the train. Present day ethnographers of train travel such as Symes have, on the other hand, captured the multiplicity of activities of commuters

> [i]ndividuals, through their engagements with such devices as mobile phones and laptops, can travel outside themselves beyond their corporeal location, into a range of virtual and imaginary spaces... the minds of countless commuters are, quite literally, off the rails, reading a book, listening to music, playing an electronic game, doing a crossword, beginning and/or finishing work (2007: 457).

Meanwhile, the mixed media illustrations[57] of rail passengers by October Jones shed further light on the mundane activities and body languages of passengers in a more amusing way (see Revolution Australia, Undated).

Keeping with the focus on public transport, Gladstone is quoted by Hubbard as advising a group of American visitors to England that "yes, gentlemen, the way to see London is from the top of a 'bus—from the top of a 'bus, gentlemen" (1895: 88). In contrast to some extent with this 'double-decker' and somewhat panoptic view of the city streets, Urry argues in his descriptions of car travel that:

[57] The illustrations comprise collages of cartoons and photographs of rail passengers which are shown online on his blog. While elucidating others' lives, the work itself also provides a further example of what passengers do between points A and B.

> [d]welling at speed, car-drivers lose the ability to perceive local detail, to talk to strangers, to learn of local ways of life, to stop and sense each different place. Sights, sounds, tastes, temperatures and smells get reduced to the two dimensional view through the car windscreen and through the rear mirror, the sensing of the world through the screen being the dominant mode of contemporary dwelling (Morse, 1998). The environment beyond that windscreen is an alien other, kept at bay through the diverse privatizing technologies incorporated within the car. (2006: 24)

Urry's argument and indeed those of the other mobilties scholars serve to bring to the surface here the question of whether or not the use of public bicycles gives rise to new visual experiences: are new sights seen or more details observed or are objects previously observed now perceived in new ways? Indeed, is there any reason to believe that 'public biking' differs visually at all from biking on 'privately-owned' machines? On urban biking, Spinney maintains that in such embodied practices "notions of place are less reliant on the visual" but this is "perhaps not that the role of the visual is reduced so much as the role of the other senses is brought more to the fore" (2007: 41). So, to my questions posed above, I add a further question for my empirical work: how important is the visual sense while public biking compared to the other senses experienced?

3.3.3 Sounds and soundscapes

As alluded to earlier, recent scholarly work has problematized the emphasis on the visual – e.g. Hetherington (2003) on proximal versus distal knowledge – so in the remaining parts of Section 3.3, I review approaches from the perceptual and behavioural geography fields that look beyond the visual, starting here with sound.

There are really two strands of 'sound' to consider: firstly and most obviously, the sounds of the city heard from within (or on) the particular mode of transport; and, secondly, those made by the particular vehicle(s) and audible to others. I touch on both strands here but focus more on the former. In regard to soundscape Raimbualt and Dubois, drawing on the work of Schulte-Fortkamp (2002), maintain that the concept "can be thought of as an alternative approach to exclusively quantitative approaches to overcome the limits of noise annoyance indicators and to handle more general concepts of sound quality" (2005: 341). So, what I am interested in is a holistic concept of what users of the city experience of the sonic environment, and how these are 'lexicalized'[58]

[58] 'Lexicalising' (or 'lexicalizing') refers to the various linguistic devices and approaches used to describe and give names to particular noises – e.g. adjectival forms might be borrowed from technical terminologies or new words might be tied onto the assumed object source. See p. 341- 342 of Raimbualt and Dubois's paper

(ibid.: 342) and categorised – i.e. are the predominant sounds related to the category of "transportation or works (from road traffic, railway, building site)" or the category of "people presence (from departmental store, coffee shop terraces, traveling shoppers)" (ibid.)?

Naukkarinen identifies the relative silence of the tram as a distinct way in which the vehicle engages the senses and creates an urban atmosphere. In describing the "nice mix of gentle humming, creaking and clattering", he maintains that the aural experience is "slightly different depending on whether one is on the tram or listening to it when it drives by" (2003: 256). Interestingly, Sandrock et al. (2008) have carried out experimental comparative studies examining the annoyance caused by noises from trams as against buses and trucks, and trams have come out relatively well.

Travelling by bicycle is often associated with being open to the sonic environment, and Aldred and Jungnickel argue that his helps to create distinctive experiences of places – for better or for worse:

> [t]he openness to sound... can be experienced as a blessing; for example, one interviewee said she loved being able to listen to birdsong while cycling to work on part of the Hull to Hornsea rail trail. However, it can be a curse: for example, people complained about constant noise from motor vehicles when on or near busy roads, noise from which users of motorised modes are themselves shielded. (2011: 17)

Of course the auditory experiences of everyday life are shaped in all sorts of interesting ways by the use of headphones with various types of radio and music inputs- as well as by mobile phones. Heye and Lamont (2010) argue that while listeners to portable music create "auditory bubbles" in public places while travelling, paradoxically (and somewhat controversially) they suggest that these bubbles enhance users' awareness of their surroundings and they are partly permeable. More recently Yamasaki et al., in their study of how listeners to portable music use it to "aestheticize" their surroundings, concluded that music may function as a prism to be used to modify one's impressions of one's surroundings in a desired direction (2013: 12). In terms of the prevalence of use of headphones while travelling Russell et al., in their investigations by structured observation of public transport journeys in Wellington, reported that 20.9% of train passengers and 17% of bus passengers use headphones (2011: 134). While there does not appear to be any equivalent data for public transport passengers in Ireland, Deegan (2011) has compared the use of MP3 players by Dublin's 'owner cyclists' with their use by *dublinbikes* riders and she found that approximately one quarter of each group listen to MP3 players on either a

'sometimes', 'usually' or 'always' basis[59]. Meanwhile Aldred contributes to the polarised debate on the so-called 'iPod zombie cyclists' in her research in four relatively high-cycling English urban areas (Bristol, Cambridge, Hackney and Hull) and she reports that:

> these cyclists [listening to audio while cycling] made situated choices about when and how they use it, describing situations in which they felt it was 'safe' and in which they felt it was 'unsafe'. In other words they were not 'zombies' automatically attached to devices but people making and regularly reviewing decisions about whether to use these devices. Often users of mobile devices cited their need for 'relaxation' in the context of pressurised and noisy urban environments... (2012a: 17)

Aldred also reminds us that the early car radios were advertised to drivers using the same reasoning, while Bull (2004) argues that in-car sound technologies transform the meanings of spaces traversed. In effect, car drivers create their own bubbles and can choose the noise around them, whereas the rest of us (on public transport at least) have to use headphones. Additionally of course, mobile and smart phones are now shaping the sonic experiences of bicycle users and de Waard et al. indicate that "2.2% of cyclists [in Groningen] were observed talking on their phone and 0.6% were text messaging or entering a phone number" (2010: 30). Their data is however around five years old now so with the rapid growth in the use of these devices, such multi-tasking behaviour may be more common now – especially in Dutch cities with very high bicycle use[60]. This combination of ICT technologies with physical mobility is an example of what Kesselring and Klarke call "the rise of new mobility and new technological cultures". They rightly remind us that "[v]irtual life used to be the bailiwick of science fiction authors but today, otherness, simultaneity and synchronicities are part of our routines" (2013).

So to conclude here, we do not yet know if there is an equivalent for the public bike journey of Laurier et al.'s "Wogan in the morning rush hour [for car drivers]" (2008: 2) - or, on the other hand, if the auditory experience is defined by silence, incessant engine-noise, bird song or

[59] For owner cyclists, 56% said they never listened to MP3 players, 12% rarely listened to MP3 players, 12% sometimes did, 10% usually did and 4% always listened to MP3 players; while for *dublinbikes* users, 60% said they never use a MP3 player, 16% rarely, 6% said sometimes, 6% usually and 12% said they always use a MP3 player. Pages 42 and 50 respectively of DEEGAN, E. 2011. Comparison of Road Safety Behaviour of Rented Dublin Bike Users With That of Owner Cyclists. Dublin Institute of Technology.

[60] The city of Groningen has a cycling modal split of over 60% - i.e. over 60% of commuting trips are taken on bicycles. VAN WOUDENBERG, M. 2011. *"Bicycle Cultures Are Man Made": Amsterdamize Guest Post* [Online]. Available: http://www.ecf.com/news/bicycle-cultures-are-man-made/ [Accessed 12/Aug 2014].

perhaps even snippets of pedestrian conversations overheard en route. This is a further sphere that I aim to elucidate in my empirical work.

3.3.4 Smells and tastes

In her exploration of the aesthetic and kinaesthetic dimensions of automobility, Sheller posits that "[s]ome [drivers] feel content with a smooth and silent ride (historically aligned with ideas of luxury, privilege and wealth), [while] others prefer an all-wheel drive that shakes the bones and fills the nostrils with diesel and engine oil (historically aligned with ideas of adventure, masculinity and challenge)" (2004: 228) and so her aromatic reflections on automobility bring me to a discussion on the smells and tastes of travel.

Smells

Classen et al., in *Aroma – The Cultural History of Smell*, claim that "[i]n spite of its importance to our emotional and sensory lives, smell is probably the most undervalued sense in the modern West" (1995: 2-3) and "[s]mell", they go on to argue, "has been 'silenced' in modernity" (ibid.: 4); it has been culturally repressed and denigrated. Drawing on Carcopino's 'Daily Life in Ancient Rome' (1940), they inform us that:

> [w]alking through the streets of Nero's Rome in the first century AD, one would encounter the stench of refuse rotting by the wayside, the piercing fragrance of burning myrrh emanating from temples, the heavy aroma of food being cooked by street vendors, the sweet, seductive scents of flowering gardens, the malodour of rotting fish at a fishstand, the sharp smell of urine from a public latrine and perhaps the incense trail of a passing procession honouring a god or hero. (1995: 17)

Furthermore, just as Holland's 17th century olfactory delights have been captured by Schama (1988), Dublin city has its own rich history of odour and malodour. Much of it is centred around Anna Livia[61] and O'Brien draws on the writings, not of Joyce, but of Jonathan Swift ("the city's Juvenal" (O'Brien, 1982: vii)) in informing us of what the city waters bore away:

> Sweepings from Butchers' Stalls, Dung, Guts, and Blood, Drown'd Puppies, stinking Sprats, all drench'd in Mud, Dead Cats and Turnipo-Tops come tumbling down the Flood (Swift quoted in O'Brien: viii).

[61] I.e. The River Liffey

Against those rich histories of urban smells, what is interesting about the sense-scapes of urban cycling as revealed by Jones in his Birmingham based mobile audio diaries research, is that their "affective intensities are particularly acute" and these "run counter to the tendency within motorised transport to try to discipline and regulate the sensory stimulation to which users are exposed" (2012: 655). Jones goes on to draw attention to the ephemeral smells of the chip shop, flowers and nettles that his cycling interviewees raise. While there is no obvious reason why public bikers would experience a different smell-scape to that of other urban bikers, there is no scholarly empirical work on this. So, we do not know if the smells sensed on (peak-hour, summertime) train, tram or bus journeys contrast dramatically with public biking aromas. These latter aromas could be dominated by floral scents or pleasant wafts from bakeries or, on the other hand, incompletely combusted hydrocarbons from diesel-engined buses and trucks or the stench of waste from wheelie-bins. We really do not know if smell figures at all on public bike journeys.

The other question that arises here relates to the smelling experiences of *other street users* in a shifting urban transport context in which public bikes operate. We might initially imagine that with even a modest substitution of trips to public bikes, there would be a consequent reduction in motorised miles and hence in engine-based emissions; however as discussed earlier, trip substitution from private cars to public bikes tends to be small (Fishman et al., 2013) and in the case of Dublin, rapid changes in the numbers of taxis plying their trade on the streets in recent years post-deregulation[62] is likely to have negated any changes in air quality and certainly to have complicated analyses. So, at this point, I feel it is wise to suggest that the above question forms a separate research topic in itself - and perhaps one best tackled from an atmospheric chemistry or environmental health disciplinary perspective.

Eating and drinking on the move

Finally, allied (to some extent) with smell is the sense of taste, and this sensory dimension prompts us to consider mobile practices of eating and drinking. While we might associate these activities with being on public transport – although Russell et al. (2011) report from their structured observations of passenger activity in Wellington that eating and drinking rates are low

[62] Entry to the Irish taxi sector was deregulated in 2000 and, according to Barrett, taxi numbers increased from 4,218 on the eve of deregulation to 21,177 in 2008. BARRETT, S. D. 2010. The Sustained Impacts of Taxi Deregulation. *Economic Affairs,* 30, 61-65. As of June 2014, the number of active taxi licences in Ireland was 29,900. NATIONAL TRANSPORT AUTHORITY. 2014b. *Active Driver Licences June 2014* [Online]. Available: http://www.nationaltransport.ie/taxi-and-bus-licensing/taxi/taxi-statistics/active-driver-licences-june-2014/ [Accessed 31/Aug 2014]. Since just under two thirds of all taxi licences are in Dublin (based on 2008 data: MCENROE, J. 2008. Revealed: Dublin has the same number of taxis as NY. *Irish Examiner*, 07/April 2008.), we can estimate that there are currently approximately 19,000 licences in Dublin in 2014.

(3.7% of sample on buses and 5.4% on trains)[63] – there is plenty of work examining the phenomenon of 'snacking at the wheel'. For example, road safety scholars have begun to focus more closely on the distracting effects of this more mundane in-car activity of eating and drinking[64] while driving (e.g. Stutts et al., 2005, Young et al., 2008), while others such as Williams and George (2013) with a research focus on supply chain networks have used quasi-ethnographic approaches to understand what truck drivers do while driving

> Snacking is one of the most popular ways to get over boredom. "I eat a lot of sunflower seeds and snacks and take a lot of energy drinks; caffeine is good in the short term but it will make you feel disinterested in everything after a while", in the words of one driver respondent. (ibid.: 89).

What appears to be a fairly recent arrival of coffee cup holders for bicycles (see for example Portland Design Works, 2014), suggests that the en-route imbibing habits of motorised urban commuters are spilling over to bicycle commuters (either very organically or else the marketeers are working hard to make this happen). This apparent trend has not yet been examined seriously. Therefore as part of my investigations into journey experiences, I will aim to throw some light on both the eating and drinking habits of *dublinbikers* on the move. This could of course encompass eating and drinking while pushing the pedals, or perhaps could tie in with the 'pausability' characteristics of urban bicycling–as discussed by Demerath and Levinger (2003) for walkers – and the ease with which one can stop and shop, which links back to the previous discussion on freedom and individualism.

3.3.5 Embodied experiences and health

Middleton's mixed method research (2010) details the embodied experiences and practices of urban walking based on her field work in inner London boroughs and her work also discusses the main traditions around how multi-sensory and embodied[65] experiences of urban walking have been theorized. These span the psycho-geography traditions as developed by the French

[63] They do note however that "eating and drinking is formally prohibited on buses and some trains" – page 140 of RUSSELL, M., PRICE, R., SIGNAL, L., STANLEY, J., GERRING, Z. & CUMMING, J. 2011. What do passengers do during travel time? Structured observations on buses and trains. *Journal of Public Transportation,* 14, 123-146.

[64] As against "the myriad and increasing technological innovations available (in particular mobile phones)" Page 142 of YOUNG, M. S., MAHFOUD, J. M., WALKER, G. H., JENKINS, D. P. & STANTON, N. A. 2008. Crash dieting: The effects of eating and drinking on driving performance. *Accident Analysis & Prevention,* 40, 142-148.

[65] It is beyond the scope of this literature review to discuss the varying traditions around deciding on what is and is not included within the term 'embodied'. For the purposes of this thesis, I am using the term 'embodied' in a sense which differentiates a particular experience from more distinct visual, aural and olfactory senses.

Situationists such as Debord (1967) and continued in London by Sinclair (1997) and Self (2011), and work by Lefebvre (2013) on everyday life and rhythms as experienced on foot. Like mine, Middleton's focus is on "gathering data on what actually happens between A and B as people move on foot" and it aims to "mov[e] beyond the pre-given assumptions and disembodied constructions of pedestrians within walking and transport policy which 'render them inert and lifeless' (Bissell 2010: 271)" (Middleton, 2010: 591).

Shifting our attention to mass transit, Wilson has responded to what she perceives as an almost completely overlooked area of inquiry by mobilities scholars: the urban bus journey. In regard to embodied experiences, she argues that for bus travellers "an increased awareness of one's body in space and in relation to others is inevitable...people stand back, crouch down, touch knees, squeeze past, and breathe in, to let others by and get by in turn" (2011: 638). Meanwhile, the embodied experiences of cycling have received quite an amount of attention recently with Spinney, in particular, using an array of mobile methods[66] to research "practices which are on the move and where meaning is produced through the interpretation of embodied interaction" (2011: 174). His work covers everyday urban cycling (2009) as well as the embodied rhythms and kinaesthetic sensations associated with racing and touring cycling (2006). Discussions around urban bodily cycling experiences can, of course, also be found in the cycling instructional literature of Franklin (2007) and his road safety warnings about destabilising effects of poor conditions of roads.

Very much related to embodied experiences is bodily health[67] and Freund and Martin, in their examination of auto-centred transport systems, argue that the "machine-assisted body has become over time a less physically fit and less healthy body" (2009: 478) and, quoting Solnit (2000: 258), they argue that it is "the un-augmented body that is rare now, and that body has begun to atrophy as both a muscular and a sensory organism". This trend is of course tightly bound up with what Demerath and Levinger describe as one of the most significant appeals of car culture: its promise of exempting a person from the effort of locomotion (2003: 235). Interestingly though, besides walking and cycling, the use of public transport is now also acknowledged to have positive physical health effects because it "generally involves walking and occasionally cycling to

[66] In Chapter 4 (Methodology), I explore the subject of mobile methodologies.

[67] There is a vast literature on the subject of the health benefits of active travel. E.g.VON HUTH SMITH, L., BORCH-JOHNSEN, K. & JØRGENSEN, T. 2007. Commuting physical activity is favourably associated with biological risk factors for cardiovascular disease. *European Journal of Epidemiology,* 22**,** 771-779. and, more recently, of the health impacts on investing in cycling - e.g. DEENIHAN, G. & CAULFIELD, B. 2014. Estimating the health economic benefits of cycling. *Journal of Transport & Health,* ARTICLE IN PRESS. on the impacts of investing in a new a segregated cycleway in Ireland. I revisit this argument at the end of Chapter 7.

transport access points or interchanges, thus increasing incidental physical activity" (Laverty and Millett, 2014: 1).

These discussions lead to an initial observation that the embodied experiences of public bikers are a completely unexplored site of enquiry. Therefore my research will examine the senses in which the *dublinbikes* journey might give rise to distinct tactile and embodied experiences compared to other (or previous) modes used by public bikers – and indeed if such new experiences might be shaping the well-being of users. Embodied experiences and other specificities here might be as mundane as sensing smooth or pot-holed roads (Aldred, 2012a: 17) or sensing changing patterns of rainfall and temperatures[68] in the city.

3.3.6 Journey emotions and states of consciousness

If my research aims to prise open public bike journeys, then the mobile emotional experiences and states of consciousness must figure in my investigations: currently we have no idea if public bikers feel exhilarated, bored, scared, distracted or hyper-alert – or all of these -on their journeys.

Over the last decade or so though, social theorists have turned their attention to how we inhabit the car (Urry, 2006), feel the car (Sheller, 2004) and feel road rage (Lupton, 1999). Urry suggests that the modes of in-car dwelling shifted from being relaxed, slow-moving voyages of the countryside (up until WWI) to more insulated experiences with road safety risks "externalised onto those outside" (2006: 27), and now to current inhabitations of intelligent cars in which digital information is continuously exchanged with the outside world. Thus, emotional experiences of driving – and "passengering" (Laurier et al., 2008) – are changing in response to technological development. How one feels in a car is, of course, also bound up with a myriad of other considerations such as how many others in one's urban vicinity are also driving – or indeed bussing or cycling – and with how one uses personalised sounds to transform the journey. Bull's research on this reveals the desire for drivers to feel relaxed, energized, connected and to feel company with the radio on (2004).

To turn to public bikers, we might wonder if their emotional journeys differ at all from their counterparts' journeys on privately-owned bicycles (as examined by Jungnickel and Aldred, 2013). We ought to remember here though that those who are *dublinbikers* may occupy different (age) cohorts than those using their own bikes and hence may have different levels of experience of

[68] For discussions on the perceptions of (poor) weather on cycling in Dublin, see KEEGAN, O. 2005. Weather and Cycling in Dublin : Perceptions and Reality. *Velo-city Cycling Planning Conference*. Dublin: Dublin Transportation Office.

urban biking; they may also have different journey patterns; and they are on different types of bikes. So, the 'emotional geography' (Anderson and Smith, 2001) of public bike journeys may be distinctive in some way. To single out (what might initially seem like) one emotion – fear of cycling - we might assume that public bikers are not filled with fear[69] while journeying, since we would expect that they would not use the *dublinbikes* if they were. However, these assumptions do not engage fully with the complexities of the fear of cycling as posited by Horton. He argues that

> fears certainly extend beyond fear of the accident... [they] may also include fear of being on view, of working one's (perhaps 'unsightly', perhaps 'sightly', certainly gendered) body in public, fear of harassment and violence from strangers... Cycling puts people back into this fearscape in a much less mediated way. (in Rosen et al., 2007: 134)

It may be the case that some *dublinbikers* experience 'fearless' journeys but we need to dig deeper in empirical work to understand the senses in which this emotion is felt (or not). Finally, Freund and Martin remind us that "[d]riving at high speeds, maneuvering traffic, and managing movement as a walker or cyclist through auto-centric transport space become everyday routines and taken-for-granted capacities" (2009: 479), so it follows that there may well be a transition in people's experiences from being a beginner to adopting the practice and knowledges as completely routine.

On the states of consciousness of mobile citizens, Freund and Martin developed an intriguing argument that one of the unpredicted consequences of mass motorisation was the "unprecedented requirement of sophisticated technological skills in large sectors of the population" and, as driving becomes more common, "the demand for an instrumental, diligent, wide-awake state of being increases" (2009: 479)[70]. In other words, this is an entire further way in which automobility has transformed life in the 20th and 21st centuries. Conversely, daydreaming and musing distractedly still appear to be amongst the joys of travel on trains (Russell et al., 2011) and trams (Naukkarinen, 2003), although perhaps less so on congested commuter journeys and as "[t]ravelling in trains has evolved into a different experience over the past 10 to15 years since the advent of the mobile phone"(Berry and Hamilton, 2010: 127). As regards the states of

[69] Of interest here is the work of Lawson et al. who concluded (on page 510), based on their questionnaire based survey of 1954 existing cyclists in Dublin, that "[c]ycling is truly perceived as an unsafe mode of travel compared to driving even by the existing cyclists who consider themselves to be competent users of the mode. LAWSON, A. R., PAKRASHI, V., GHOSH, B. & SZETO, W. Y. 2013b. Perception of safety of cyclists in Dublin City. *Accident Analysis & Prevention,* 50**,** 499-511.

[70] One could also argue that, for much of the 20th century, the skills used in driving were more demanding than those of routine factory work for the working classes. Cf. BLACKBURN, R. M. & MANN, M. 1979. *The working class in the labour market* Macmillan.

consciousness of urban cyclists, Jungnickel and Aldred make a contribution here in their 'views from the saddle' research, but it should be noted that their work was conducted in locations with higher than average cycling rates: Hull, Hackney and Bristol; experiences may well differ sharply in places in which cycling is a rare sight. Their main argument though is that

> cyclists are just as consciously aware, if not more, of their sensory engagement as other transport users and engage in sensory strategies that manage their exposure to it. Just as drivers use the radio to create a safe, social and comfortable space on the road, it is possible to interpret cyclists' sensory strategies as ways of negotiating and domesticating challenging environments. (2013: 253)

These musings generate another strand and question to my research: what is the nature of *dublinbikers'* states of consciousness as they ride around Dublin? Moreover since Simmel maintained that the nerve-racking nature of modern city life shaped the personalities of city residents (in Frisby, 1997), could it follow on that the persistent use of particular forms of mobility (including public bikes) shape the personalities of users in distinctive ways? Might the emotional and sensory side of travel create semi-permanent impacts on states of mind[71]? These are further questions that I aim to touch on in my empirical work.

3.3.7 Mobile meanings and navigations

Meanings

Intimately intertwined with visual, aural, olfactory, embodied and emotional experiences are questions around mobile meanings of space and place. Might there, for example, be anything about public bike journeys that evokes a particular significance for users? Might histories matter here – i.e. the personal memories or municipal histories that might be triggered as *dublinbikers* pass through urban spaces? In essence, what might be distinctive about the meaning of journeys on *dublinbikes* compared to those on, say, a Dublin Bus or a *Luas*[72] tram or a taxi? As Cresswell argues, the meaning of a journey – be it associated with drudgery or peaceful private moments or rebelliousness – is seldom dealt with well through technocratic ways of thinking; it is through a mobilities or literary perspective that one begins to examine these facets of the journey (Mobile Lives Forum / Mike Brulhardt, 2014). In probing these meanings we also need to ask if such

[71] And thus echoing Flann O'Brian's musings on molecular exchanges between bicycle saddles and policemen's bottoms? O'BRIEN, F. 1983, c1967. *The third policeman* London, Granada.

[72] *Luas* is the Irish name (meaning 'speed') for the trams introduced to Dublin in 2004. Of course, like many other cities in Britain and Ireland, Dublin has a much longer (broken) history of tram development. For this longer history of Dublin's trams and tramways, see CORCORAN, M. 2000. *Through streets broad and narrow: A history of Dublin's tramways.*, Leicester Midland Publishing.

journeys mean different things to different people, and might those meanings morph a little according to where one cycles or in response to public discourses around the practices of urban biking (public biking or otherwise)[73]? These questions touch on issues of (stigmatised) cyclist identities which Aldred (2012c) examines in the context of motor dominated societies (of which Dublin could certainly be classified (Wickham, 2006a)).

Relatedly Naukkarinen posits that trams are quintessentially urban in the atmospheres and meanings they exude, and they evoke a sense of historical nostalgia. Older trams have "been used by several generations, which creates the same sort of historical continuity to the city as old buildings do... Here, the past persists stubbornly" (2003: 258). While the *dublinbikes* bicycles are all new – and the same can be said for all '3rd Generation' public bicycles[74] - we might ask if it is the case that experiences of cycling on public bikes are evoking older (fond or grim) cycling memories for some returning to the bicycle or if they are seen as being part of a modern Dublin.

Navigations and meanderings

Another consideration emerges from research in the environmental psychology and public health fields which suggests that "urban blue", meaning all visible surface waters in urban areas, "may be considered as a therapeutic landscape due to the specific mix of health-enhancing aspects" (Völker and Kistemann, 2013: 122). Related then to previous discussions around freedom, further questions arise here as regards if and how *dublinbikers* – who might have easier access to viewing the River Liffey than those 'carcooned' and hidden away[75] – might enjoy more therapeutic and peaceful journeys than others. One is reminded here also of visual artist Fergal McCarthy's ideas on creating a linear park alongside the River Liffey so as to re-centre the river in Dubliners' lives (TEDx Talks, 2012). Related also to the meanings we associate with urban meandering, Engwicht

[73] Heinen et al., in their meta-analysis of the literature on determinants of cycling to work, concluded that "[i]f the individual's social surroundings have a positive opinion of cycling, then there is a higher chance that the individual in question will cycle" – page 76 of HEINEN, E., VAN WEE, B. & MAAT, K. 2009. Commuting by Bicycle: An Overview of the Literature. *Transport Reviews,* 30, 59-96.

[74] That is, they are all less than five or ten years – very new compared to some subway rolling stock that has been used for several (human) generations. See also SINGH, D. Z. 2014. Meaningful mobilities: the experience of underground travel in the Buenos Aires Subte, 1913-1944. *Journal of Transport History,* 35, 97-113. Singh refers here to the subway cars that were used continuously for almost a century.

[75] Over the last decade or so, two 'pedestrian-only' bridges (the 'Millennium Bridge' and 'Seán O'Casey Bridge') and one pedestrian / cycling / public transport-only bridge (The 'Rosie Hackett Bridge') have been constructed over the Liffey (DUBLIN CITY COUNCIL. 2014b. *Bridges of Dublin* [Online]. Available: http://www.bridgesofdublin.ie/ [Accessed 16/Aug 2014].). While acknowledging that some of the other bridges are perceived to be quite hostile environments for bicycle users (see for example DUBLIN CYCLING CAMPAIGN. 2011a. *'10 Worst' places in Dublin* [Online]. Available: http://www.dublincycling.ie/cycling/10worst [Accessed 03/Jan 2014].), given that cyclists do (illegally) use the 'pedestrian-only' bridges (see for example FEX, F. 2011. *Dublin Cyclists Sean O'Casey bridge* [Online]. Available: https://www.youtube.com/watch?v=JgpY0IqM1Wg [Accessed 16/Aug 2014].), we may deduce that both they and the pedestrians have preferential access to views over the river compared to other road users.

(1999) is concerned with reclaiming our streets from motorised traffic since he maintains that we use our imaginations and invent stories about passers-by when we loiter in the public realm; we yearn to be intrigued and stimulated by the external world while on the street – not shut off or 'carcooned'.

Belonging

Bound up with the concept of sense of place is the notion of belonging. Hagerty et al. have defined belonging as "the experience of personal involvement in a system or environment so that persons feel themselves to be an integral part of that system or environment" (1996: 236) and, referencing Maslow (1954) and Thoits (1982), they think of it essentially as a basic human need. More recently, scholars such as Gustafson (2009) have begun to interrogate relationships between different types of mobility (e.g. daily commuting, long-distance travel, residential mobility, and international migration) and people's sense of belonging. As regards daily commuting, he found that

> commuting times greater than 1 hr were associated with lower levels of local and regional belonging, but had no significant relationship with belonging on higher territorial levels. These results are in accordance with claims made by Putnam (2000) and others about the negative effects of commuting on local communities (2009: 502)

What has been examined much less though – a notable exception being Spinney (2007) - is if or how different forms of (corporeal) mobility, say for particular (commuting) trips from A to B, give rise to different senses of belonging. While Aldred's work on 'Cycling Cultures' has found, firstly, that compared to motorised modes cycling creates distinctive "experiences of places" (2012a: 17) and, secondly, that for some cyclists, encountering "packs" of other cyclists at junctions gives rise to a feeling of being "part of a rising tide" of bicycle users (while, she adds, making others feel nervous (ibid.: 19)), her work does not deal explicitly with the concept of belonging. The question that arises for me in regard to the *dublinbikes* 'experiment' is whether or not being a public biker creates stronger feelings of belonging in a city compared, for example, to being a regular bus or taxi user (or even an 'ordinary' cyclist). My rationale for raising this hypothesis is partly a response to thinking about the car as a "semi-privatized and hugely dangerous auto-mobile capsule" as Urry puts it (2006: 18), but also in listening to some (older) cyclists such as Prof. Risteard Mulchahy describing "the social side [of cycling]" and how "you are in touch with people [when on a bicycle] while you are more-or-less isolated as a motorist" (Cahill, 2014). Additionally, we might argue that there is strong 'public' component to public bikes with the municipality often being a co-owner and promoter, as described earlier. In conclusion, one further research

objective for me is to explore the notion of belonging. I revisit this concept in section 3.3.8 below as I broach the subject of socialities.

Urban navigations

Just as some transport scholars have examined factors shaping route choices for urban walkers (e.g. Kelly et al., 2011)[76], others have done so for cyclists. For example Menghini et al., using a large sample of GPS observations (which, they argue, overcomes the limitations of stated preference approaches), underlined the importance of direct and marked routes for cyclists (in their Zurich based study). Their study was limited though by them not testing other "possibly relevant characteristics of the street network: average or maximum [motorised] traffic volume[s,].... types of intersections [and] the type of bike path" (2010: 764) – characteristics that others (such as Dublin Cycling Campaign, 2011a) have highlighted as strongly shaping the cycling experience. More recently Broach et al., again using GPS data for utility trips, found that "cyclists [in Portland] are sensitive to the effects of distance, turn frequency, slope, intersection control... and traffic volume... [and they] appear to place relatively high value on off-street bike paths [and] enhanced neighborhood bikeways with traffic calming features..." (2012: 1730). Additionally, Forsyth and Krizek raise a number of related questions while drawing on an urban design approach. They ask:

> [h]ow can the scale of buildings and streets reflect cycling dimensions and views, particularly in dedicated paths? What level of visual detail (materials, plantings, openings, etc.) is most appropriate for cyclists given their speed and safety concerns? Could detailed design allow for more social interaction on the paths and at destinations through well-designed path pull offs, parking and alternative slower-paced routes? (2011: 546)

Taking an alternative approach again, scholars from a mobilities ('post-disciplinary' (Jessop and Sum, 2001)) perspective have questioned conceptualizations of place and non-place (and Augé's 'non-places of supermodernity' (1995)), with Spinney arguing that

> [t]he non-places of modernity[77], when viewed from an alternative perspective, are imbued with meaning as places of significance in people's everyday lives...[and therefore] travel and route choice are not simply a matter of economic or temporal maximization, they are a product of embodiment and ultimately culture. (2007: 42)

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[76] See also: RAMOS, J. M. & ALVES, M. J. (eds.) 2010. *The Walker and the city,* Lisbon: Associacao de Cidadaos Auto-Mobilizados (ACA-M).

[77] Examples of Augé's 'non-places' include airports, superstores, motorways and international hotel chains.

Applying these arguments on navigational choices to my work, a number of questions emerge. what considerations do public bikers use in making route choices? Do transport studies-type variables dominate or are less easily quantifiable dimensions of travel shaping navigations - or could public bike journeys imbue users with new meanings of place which then, in turn, shape further route choices? Currently scholars do not know; these questions have not been examined. A final point to raise here – and one that relates to earlier discussions on freedom - concerns the concept of 'non-navigabilities'. Urry, who draws on the work of Kunstler (1994), points out that "[a]utomobility simultaneously disables those who are not car drivers (children, the sight impaired, those without cars) by making their everyday habitats dangerously non-navigable" (2006: 20). This suggests a further line of enquiry: how might the increased use of public bikes shape the navigability of the city for pedestrians[78]?

3.3.8 Traffic, mobility and social capital

I return now to the issues that first roused my curiosity on commencing my research: the sense in which bicycling[79] might - or indeed might not - bring its users into social contact with others on the street and how that compares with other travel modes. This proposition connects with a number of long-running debates within the discipline of planning around the liveability of streets on which I recap briefly here.

Streets

Appleyard's seminal work in San Francisco in the late 1960s and early 1970s demonstrated how increasing motorised traffic levels impacted negatively on the liveability of streets[80] (Appleyard et al., 1981, Appleyard and Lintell, 1972) and these findings were replicated in Bristol by Hart (2008). More recently still, Short and Pinet-Peralta, drawing on the ideas of Virilo (2005), point to the "destruction of the sociability of the city by the logic of acceleration" (2010: 41). For the non-car users, as Urry puts it, roads are

> full of moving, dangerous iron cages. There is no reciprocity of the eye and no look is returned from the 'ghost in the machine'. Communities of people become anonymized flows of faceless ghostly machines. The iron cages conceal the expressiveness of the face

[78] This is a question touched on by BEROUD, B. & ANAYA, E. 2012. Private Interventions in a Public Service: An Analysis of Public Bicycle Schemes (Chapter 11). *In:* PARKIN, J. (ed.) *Cycling and Sustainability.* Emerald., as mentioned briefly in Chapter 2.

[79] I use term the 'bicycling' quite loosely here to encompass both the use of 'public bikes' and 'privately owned bikes'.

[80] The measurements they used in their studies focused on: the number of friends and acquaintances on the street that residents had; the amount of social interaction on the street; and (hence) the degree to which the street was 'knitted together'.

> and a road full of vehicles can never be possessed. There is no distance and mastery over the iron cage; rather those living on the street are bombarded by their hustle and bustle and especially by the noise, fumes, tastes and relentless movement of the car that can never be mastered or possessed (2004: 30)

There is of course a thread linking Appleyard's work to Jacobs' a decade earlier (1962). Her argument was that the modernist approach to planning produced inhuman, spiritless, failed projects- the exact opposite of what she observed in 'successful' neighbourhoods, centred around smaller sized urban blocks, mixed zoning and mixed aged buildings, for these were characterised by day-long street activity and diverse uses, and Jacobs argued passionately that these activities gave rise to safer environments (through the 'eyes on the street' and 'weak social ties'). Her ideas fed into the *New Urbanist* movement (see for example Passell, 2013) and find expression in the urban design work of Gehl (Gehl, 1987 , Gehl, 2006) but also, I would argue, in the work of Peters et al. (2010) who concluded that urban parks help different ethnic groups to mix and, through informal interactions, can stimulate social cohesion. For Peters (and Putnam (2001)), social cohesion is all about building bonds between people in society, especially those across different ethnic backgrounds and classes; it is about individuals participating in society and feeling acceptance. It is acknowledged though that the concept is multidimensional (encompassing economic, social, and political domains), has many definitions and hence many different ways to measure it (Rajulton et al., 2007). In this thesis, my main concern is with the social dimensions of the concept at a local level – i.e. it is bound up with feelings of belonging and interacting regularly, peacefully and meaningfully with people beyond one's own immediate family, close friends or work colleagues.

Interestingly, scholars such as Corcoran et al. have begun to re-visit the mainly negative assessment made of the suburban social fabric and they argue that residents in such estates are not disaffiliated: they are in fact connected with the place where they live and with each other (Corcoran et al., 2009, Corcoran et al., 2010). In summary, there is a large body of work produced by scholars of urban planning, urban design and (urban) sociology which explores the different street socialities associated with different planning paradigms – as well as differing levels of motorised traffic.

In-car socialities

The focus of the above studies was however generally on pedestrians' and residents' experiences as opposed to those (non-residents) moving through the street by car. It is to those inside vehicles that I now shift my attention.

Putnam argued that long commutes (over space and time) have had a negative impact on social capital (SC), defined to mean the development of reciprocity, social networks or participation and trust between people (2001). While his focus was commutes in mainly single occupancy vehicles, a number of mobilities scholars have since examined journeys with multiple occupancies. From a sociability perspective, the crucial point here of course, as Urry puts it, is that "[c]ar-drivers control the social mix in their car just like homeowners control those visiting their home" (2006: 27) – as exemplified by the socialities associated with 'car cruising' as explored by Collin-Lange (2012). Laurier et al. (2008), on the other hand, have examined ordinary episodes of car travel in which a number of people (family members or friends) travel together. Their thesis is that 'collective private transport', as they call it, involves "an avalanche of talk on a slew of topics" (ibid.: 7): there is much more going on inside the 'steel-and-petroleum' car (Urry, 2006) than often acknowledged. Further, they posit that "[c]onversations that we typically imagine taking place over dinner or breakfast tables have been shifted into the space of the car" (2008: 20) since

> by its dimensions the car remains a small space and its confinement and proximity... exert considerable pressure to speak. A particular type of private space, the car is where others are invited to be transported from one place to another, a place that it is notably unlike public transport where the social expectation of speech is reduced to the point of polite indifference. (Ibid.: 15)

Their final observation on the socialities of public transport leads me into my next section.

Public transport, social capital and social interactions

Public transport has become a busy site of enquiry for social geographers and those studying social capital (SC). For example, Wickham's empirical work in the cities of Athens, Bologna, Dublin and Helsinki showed that a public transport *system* (as opposed to a number of poorly integrated routes) physically ties a city together and supports social inclusion by enabling all city inhabitants to move around the city (2006b). Currie and Stanley (2008) on the other hand have theorised how social capital, a concept which they maintain suffers from 'fuzzy' definitions, might relate to public transport practices. One line of enquiry focuses on social interaction while travelling and they theorise that this

> can occur as a part of travel on public transport since it is by definition 'public' and 'shared'. While [such] interactions... are probably not very 'deep' or 'strong', these interactions represent some of society's most extensive opportunities to interact with

> people outside the individuals common social circles. As such it has good potential for developing bridging SC. (ibid.: 537)

Intriguingly, in responding to the work of Evans and Wener (2006) on rail passenger stress, Currie and Stanley postulate "that commuters can interact more frequently with strangers as a psychological response to the frustrations caused by delays" (ibid.: 541) thus suggesting that such chats and communication with unacquainted others are not the norm. Developing an alternative perspective through her ethnographies of longer distance train travel, Watts opines that "although there may be a single train moving down the tracks, there may be several communities of train travellers: one carriage is chatty, another is filled with phone calls, another is cold and still..." (2008: 722): there are then multiple social realities within the same vehicle! On the socialities of tram travel, Naukkarinen maintains that "[b]ecause the tram is urban and public, it is very social" (2003: 252-253), but quickly qualifies this position:

> One does not really get to know anyone in the tram, of course, but the time spent together is still longer than when people simply pass each other in the street. When using the tram one has to know how to give and take space, how to show one is getting out, how to be polite, or impolite when necessary, and so on. Put simply, one has to know how to be an urban social being... A stranger or a foreigner is normally very easy to spot even during a short tram ride because she or he does not know the rules well enough to blend into the crowd. (ibid.)

Finally, to briefly consider bus travel, Wilson has reflected on the smaller space, distinctive movements and particular passenger demographics that she observes on bus journeys in Birmingham, all of which shape behaviour and interaction in distinctive ways (2011: 643). There is, she maintains

> [n]o other urban setting [which] places bodies in quite the same way. The space is continuously (re)negotiated and (re)ordered through mobile and constantly shifting practices of movement, behaviour, expectation, assumption, and assertion as people come and go... [A bus journey] can solidify prejudices and antagonisms as much as it can weaken them and might produce something closer to recognition than it can to consensus or understanding. (ibid.: 646)

Further, she points out that even for the same bus route, journeys taken on different days or times are likely to produce "different experiences and performances" (ibid.). Focusing in on a

particular age cohort using buses, and responding to the work of Stanley and Stanley (2004) on how some elderly people use local bus services purely for the purpose of interactions with others on the bus, Currie and Stanley theorise that with "an aging population... these situations are likely to increase" (2008: 541). Of course, these sociable experiences for the elderly need to be traded against the edgier encounters on mass transit – such as those incidents reported on by O'Connor (2013), in relation to the 'Red Line' *Luas* tram where there were over "1,300 incidences of vandalism were recorded last year – 25 per week".

This race through some of the key texts on the socialities of various public transport modes serves to remind us of one of the main axioms of mobilities studies: that travel involves more than travelling; there are a myriad of on-board experiences – and a "diversity that is shot through the passenger body criss-crossed with multiple expectancy, use of travel time, rationale, thresholds, and so on" as Bissell puts it (2010: 285). The discussion now sets us up to consider the socialities associated with self-propelled travel: walking and cycling.

Pedestrian and cyclist socialities

Researchers such as Sallis et al. (2004) have sought to deepen our understandings of the relationship between the nature of the built environment and public health, but also to promote collaboration among transportation, planning, and health investigators. Their ultimate aim is to stimulate more everyday walking. Meanwhile Demarath and Levinger have taken a close look at the social side of walking and they argue that shared meanings of the world are more easily developed on foot and this results in individuals' greater sense of community and social support (2003: 218). A key concept for them is pausability -"a combination of the ease of interrupting an activity and the ease of resuming [it]" and they theorise that the "pausability of travel would appear to be inversely related to its average speed, and to the human energy required to reach it (partly why bicyclists tend to roll through stop signs with such great frequency)" (ibid.: 230). In elaborating how these pedestrian interactions come about, they suggest that

> [o]thers can choose to interact with you by estimating from your identity symbols what your experience or knowledge is, what your values are, or what your social structural position is in terms of race, class and gender. They can... choose to interact with you, or not, accordingly. Cars may vary in their symbolism (e.g., an old VW bus vs. a sports car vs. a luxury sedan), and bumper stickers can be more powerful communicators of the owner's identity, but they are not as complete and organic as the person himself or herself. As a result, negotiating the definition of the situation and its constituent identities tends to be less constrained when on foot. (2003: 229)

For me, these ideas immediately prompt the following questions: do (and, if so, how do) urban cyclists interact socially as they move about during their everyday routines, and is there any evidence to suggest that there is community-building dimension to these interactions? I am reminded here of the poster shown as Figure 3.1 below which seeks to promote the idea that bicycle transport is not only more space efficient than its four-wheeled automobilised equivalent, but also more sociable in terms of proximate interactions. At this point though one begins to think about the thorny task of needing to differentiate between different types of cyclists- and different (and complex) cyclist identities (Aldred, 2012c). Whitaker, for example, studied a group of older-age Italian bicyclists and deduced that "the bicycle, whether used for rides with a cycling club or to do errands or make visits around town, brings the rider out into the world and into direct contact with other people" (2005: 26); and, as one of her interviewees put it, "*la bici fa sorridere gli occhi* (the bicycle makes the eyes smile)" (ibid.: 18-19). While Jensen, in her study of everyday (utility) cyclists in Copenhagen argues that cycle mobility "provides alternative opportunities for a 'sense of place', for social interactions, for emotional encounters, for slowing down speed, for sensing the natural and urban environment and for more equal accessibility in terms of social status and financial costs" (2013: 224).

Public bikes and sociabilities: emerging questions

The discussions above lead me to questions around the socialities associated with public biking. Here I can firstly apply Demarath and Levinger's ideas on pausabilities; and secondly apply their theories on the transparency of pedestrians' identities to those of the public bikers (who, according to Deegan (2011), are far less likely to be obscured by helmets and other personal safety equipment compared to other cyclists).

The questions then become: firstly, does urban journeying on public bicycles generate a greater number of spontaneous (and pleasant) street encounters - with friends, acquaintances and unacquainted others – compared to journeying by motorised (or ambulatory) modes and even compared to ordinary bicycles?; secondly, if such encounters occur, where do they happen most frequently – at docking station queues (Cf. Vannini, 2011: on ferry line-ups), along particular streets, or under particular conditions?; thirdly, if such conviviality exists, might it contribute in some tangible way towards greater social cohesion in the urban context - of the community-building or 'weak-ties' variety described by Jacobs (1962)? Of course interactions between road users, social or otherwise, will cross modal categories, so Christmas et al.'s qualitative research on what different road users think of each other may also be of relevance here. Their work revealed that while almost all cyclists (they interviewed) were also drivers of cars, "[f]ew of them, by

contrast, drove HGVs or buses. Unsurprisingly, therefore, there was much more evidence in these groups of empathy for car drivers than for the drivers of HGVs and buses." (2010: 54).

Conversely, could public biking be amongst the most solitary ways of moving through what would include, what Freund and Martin call, "auto-centric transport space" (2009: 479) since one does not have the (potential) company of mass transit passengers or other car occupants? There is no research thus far carried out on this topic and interestingly, Currie and Stanley argue that there is much scope for primary research "to measure SC [Social Capital] and its variation with respect to mobility and accessibility" (2008: 544).

3.3.9 Post-journey thoughts

The final aspect of the journey I wish to mention here is the thinking associated with journeying and, once again, I need to acknowledge the extreme difficulty in disentangling thoughts from sensations and emotions and states of consciousness – as discussed earlier. Furthermore, while accepting that the lines may well be blurred between the two realms, on the one hand we might consider the thoughts that arise *while journeying*; on the other, we might consider those that crystallise *in response to journey experiences*. I touched on the former realm, at least to some extent, in section 3.3.6 (Journey emotions and states of consciousness) when I discussed en-route musings and daydreams, but it is the latter realm that I wish to probe briefly here.

My concern here is whether or not it even makes sense to wonder if journey experiences associated with particular modes of moving about subsequently generate distinctive thought patterns or opinions. So to what extent, if any, might such journeys shape deeper opinions on a whole raft of issues? And focusing on public bikes, do those experiences shape users' thoughts on any wider issues? Perhaps these might include, for example, residential choice, issues around transport, sustainability and health, the meaning of bicycles (i.e. does their dominant meaning shift away from being considered a toy or a piece of sports equipment or public transport)[81], attitudes to other cyclists, the legitimization of cycling, consumer choices (including buying bicycles), gratitude for the service available etc. And following on from such new thinking – again, while acknowledging that it is unlikely to be easy to trace a new thought directly back to a new (public biking) experience – what new behaviours might ensue?

[81] For an interesting discussion on representations on bicycling, see Chapter 5 "Two-Wheeled Terrors and Forty-Year-Old Virgins: Mass Media and the Representation on Bicycling" of: FURNESS, Z. 2010. *One Less Car: Bicycling and the Politics of Automobility,* Philadelphia Temple University Press. in

At this point, it is suffice to say that these are complex issues and there is no single body of literature which deals with these questions since they are likely to be very cross disciplinary - although some scholars such as Freund and Martin have hinted at wider cognitive consequences of auto-centred transport systems – e.g. " the need for a more general sobriety in a technological society" (2009: 479) - while Simmel (in Frisby, 1997) and Schivelbusch (1986) have mused on how urban and rail experiences, respectively, shape perceptions. The brief discussion in this section here leads me to the final main section of this literature review: the systems effects of introducing public bikes.

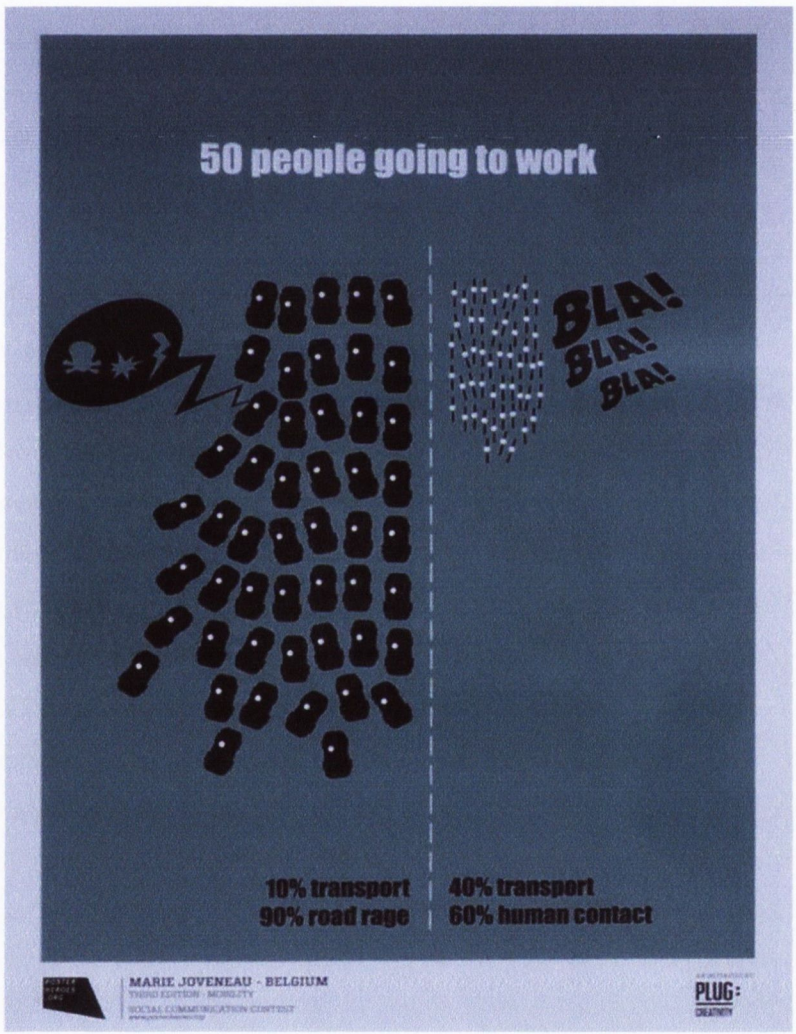

Figure 3.1 – Image by Joveneau (2013) in the 'Poster Heroes' competition

3.4 Systems, transitions and the Multi-level Perspective (MLP)

In Chapter 2, I began to argue that contemporary public bike schemes are better understood as systems rather than as artefacts because of the deep integration between the fleet of bicycles and other physical infrastructures (e.g. docking stations and vans to redistribute bicycles) and with everything connected electrically, electronically and through institutional and financial architectures into a coherent whole. In this part of my literature review, I consider more carefully the nature of technological systems and discuss some theories around how, historically, technologies "shaped and [were] shaped by" (Douglas in Bijker et al., 2012: viii) the wider social and cultural context as they developed. This leads me to an examination of the concept of transitions and I focus on one particular conceptual framework that has been used extensively to shed light on both successful and failed technological transitions. From these discussions emerge a series of questions around the processes associated with the nestling of a PBSS into a city.

3.4.1 Systems

While it is not an easy term to define – and Hughes reports that "Ludwig von Bertalanffy, one of the most articulate of systems theorists, needed a book[82], not a paragraph, to define 'system'" (1983: 5) – a system, in its most general sense, can be thought of as being constituted of related parts or components and, in technical systems, these are connected and controlled centrally "in order to optimise the system's performance and to direct the system toward the achievement of goals" (ibid.). It is essentially about relationships or interdependent entities forming an integrated whole. To consider systems as a broader construct, in the 19th century the Harvard scientist Josiah Willard Gibbs stated that a system can be thought of as: "[a]ny portion of the material universe [including ourselves and everything we have invented including social systems] which we choose to separate in thought from the rest of the universe for the purpose of considering and discussing the various changes which may occur within it under various conditions" (Madron and Jopling, 2003). According to this latter definition, when we define and agree upon the boundaries of a system, we are making a somewhat subjective decision as to what is included and excluded. I revisit this point further below.

Hughes' (1983) overarching argument in regard to the growth and spread of capital-intensive technological systems such as electricity systems was that these were complex processes involving many actors besides scientists and engineers; they require financiers and legal specialists to secure patents, and they also require an understanding of how to change the

[82] VON BERTALANFFY, L. 1968. *General system theory: Foundations, Development, Applications,* New York, Braziller.

prevailing political and legal systems into which the new technology is to be embedded. In Hughes' terms, as Geels (2002: 1257) reports, there is a 'seamless web' in which "physical artefacts, organisations, natural resources, scientific elements, legislative artefacts are combined in order to achieve functionalities".

Cycling systems

Interestingly, the concept of a 'cycling system' (as distinct from a 'public bike system') is already in use - albeit not in *common use* - in the policy arena. The German Federal Ministry of Transport (2002) makes use of the concept (see Figure 3.2 below), stressing the need to think about "cycling as a system" in its *National Cycling Plan 2002-2012*:

> Full use can only be made of the mobility potential offered by the cycle if, on the one hand, infrastructure, the regulatory framework, services and user motivation, and, on the other hand, information for the decision-makers (planners, builders, etc.) are considered to be equal parts of a comprehensive system. The motto is "cycling as a system". (ibid: 10)

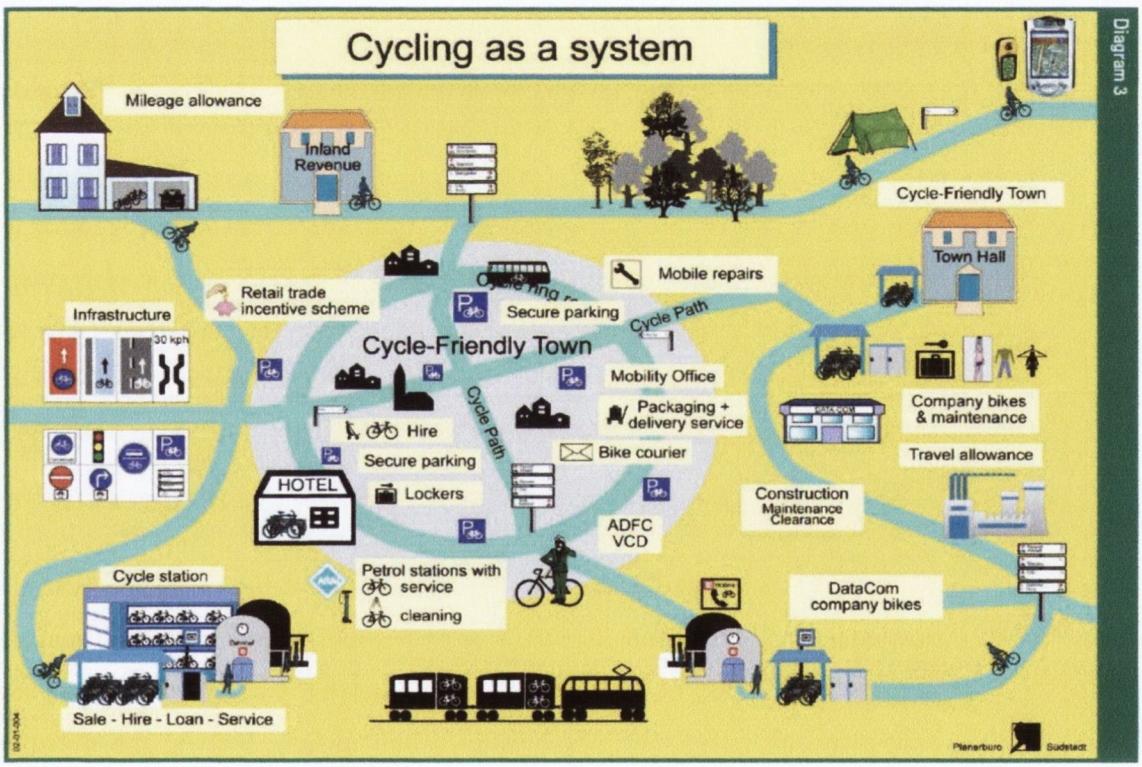

Figure 3.2 – "Cycling as a System" (German Federal Ministry of Transport, 2002)

Such systems thinking as applied to cycling policy draws on the approach underpinning the *BYPAD* Bicycle Policy Auditing tool used to critique and improve the cycling policies of municipalities (see,

for example, Ó Tuama, 2004, BYPAD Consortium, 2010, Colin Buchanan, 2006-07, Ó Tuama, 2011). The essential point here is that if there is a policy aim to (re)create (in this case) a culture of everyday cycling, then very different realms 'within the system' – institutional, infrastructural, legislative and financial – need to be tended to and reshaped.

Complex systems, socio-technical systems and public bikes

Dennis and Urry's work (2009) on the system of automobility draws on the concept of *complex systems* and thus the work of systems theorists such as Capra (1996) and Prigogine (1997). In an earlier work engaging with the same concepts, Urry argues that

> [a]utomobility can be conceptualized as a self-organizing autopoietic, nonlinear system that spreads world-wide, and includes cars, car-drivers, roads, petroleum supplies and many novel objects, technologies and signs. The system generates the preconditions for its own self-expansion" (2004: 27).

The 'non-linear' characterisation above implies that small changes in one part of the wider system may prompt quite large shifts (or even 'tipping points' (Gladwell, 2000)) in another.

My argument at this point is that public bike schemes can be usefully thought of as examples of 'socio-technical systems'. The concept of a socio-technical system (or ST-system) is difficult to define and is used in slightly different ways by different scholars. However, its essence is that this particular type of system not only includes mechanical or electrical/electronic elements; what are also important are the social aspects, "particularly the ways that individuals and teams [co-operate and collaborate] to use the available technologies", as Baxter explained in the context of long wall coal mining operations shortly after World War II (Baxter, 2011: 6-7). Geels, on the other hand, defines:

> ST-systems in a somewhat abstract, functional sense as the linkages between elements necessary to fulfil societal functions (e.g. transport, communication, nutrition)... ST-systems thus consist of artefacts, knowledge, capital, labour, cultural meaning, etc. ... Socio-technical systems do not function autonomously, but are the outcome of the activities of human actors. Human actors are embedded in social groups which share certain characteristics (e.g. certain roles, responsibilities, norms, perceptions). (Geels, 2004)

While Geels' definition suffers from the weakness that it sounds like it can include pretty much everything, in this thesis I use the term 'ST-system' to refer to that type of system which is fulfilling a societal function and which has technological elements and a set of actors, each with their own set of roles. In the case of the PBSS, the actors include those who produced the system and those who use it.

While 3rd generation PBSS are obviously not capital-intensive at the scale of, say, a new tram (ST-) system[83], nor anything close to being as hegemonic as the system of automobility, they are nevertheless very different beasts compared to the original Provo scheme. Moreover, I propose that characterising the scheme as a *complex* ST-system[84] matters because it helps in interrogating the nature of any changes to the receiving environment, institutions, values and other domains that may occur prior to, synchronous with, or after its introduction. Some further sets of questions arise as well, drawing (for inspiration) on the examples of the large scale technical systems.

First of all, in the case of the development of electric lighting, it was gas lighting systems that were challenged and ultimately made obsolete (Hughes, 1983), while in the transportation realm it was the almost complete destruction of many tram systems in US cities that ensued as the system of automobility spread (Dennis and Urry, 2009). We might ask then: what (if any) existing systems are public bikes challenging? Secondly, according to Dennis and Urry, automobility created a "landscape sculpted by the car system" and after the petroleum based car became locked-in, "an astonishing array of other industries, activities and sociabilities came to mobilize around the petroleum-based car" (Urry, 2007: 15). The relevant questions for me are: can we observe any 'emergent effects' - such as new industries or positive feedback loops or 'switching points' in the paths of transport and development – or can we even imagine what 'lock-ins' or changes in the 'fitness landscape' could a public bike system set in motion? Thirdly, could the applications of a complex socio-technical systems lens to public bikes illuminate undocumented phenomena in a given city or, alternatively, demonstrate that there is, in fact, nothing interesting at all going on beyond (narrower) shifts in transport planning-type indicators (i.e. modal shifts of one type or another); and to continue with an earlier metaphor, could the use of such a lens help us to map

[83] It is estimated that the capital cost of constructing Dublin's 6km long "Cross City Luas" tram is €368M RAILWAY PROCUREMENT AGENCY. 2014b. *Luas Cross City. What's the plan?* [Online]. Available: http://www.luascrosscity.ie/ [Accessed 06/Sept 2014].

[84] Sussman's lecture at MIT (*Complex Sociotechnical Systems - The Case for a New Field of Study. The Annual Charles L. Miller Lecture given by Joseph M. Sussman,* 2012. Directed by MITTECHTV.) seeks to map out the nature of a field of study of complex socio-technical systems while building on his systems engineering background and initial work on complex systems (SUSSMAN, J. M. Collected views on complexity in systems. Proceedings of the Engineering Systems Division (ESD) Internal Symposium, 2002. 453-478.).

out the furthest places that ripples reach when a new socio-technical system – a public bike system - settles into place?

Technological determinism and the social shaping of technology

In some senses, I am invoking ideas from the tradition of technological determinism (TD). According to a 'hard version' of TD, technology is understood to be *the* driving force of history: it has its own innate power and transformative effect and adherents to this position maintain that changes in technology exert a greater influence on societal processes than any other factor; a 'soft version' of TD posits that technology is located in a more complex social, economic, political and cultural matrix, with agency thought of as being deeply embedded in the larger social structure and culture - so much so as to divest technology of its assumed power as an independent agent initiating change (Smith and Marx, 1994). More recently, Wyatt (2008) has maintained that one of the challenges for Science and Technology Studies (STS) is

> to conceptualise the dialectical relationship between the social shaping of technology and the technical shaping of society; and to treat symmetrically the categories of analysts and actors even if the latter includes technological determinism, anathema to so much contemporary scholarship in the humanities and social sciences. These dialectics are unresolvable one way or the other, but that is as it should be. What is important is to continue to wrestle with them. (ibid.: 463).

Following Wyatt then, I am looking to wrestle with what appear to be the dual processes by which there is a social shaping of the public bike scheme (e.g. in relation to its coming into being and how it expands - see Dublin City Council (2011b)) and its own shaping of society (the nature of which has not yet been mapped out). Furthermore, while I acknowledge that the scale and social effects of electric power systems (Hughes, 1983) or of the 'system of automobility' (Urry, 2004) will be immeasurably greater than those of public bike schemes, I posit here that by thinking in systems-terms, one can then engage with, to borrow Hughes' words, "a broad range of factors, events, institutions, men, and women involved... technical, economic, political, and social" (1983: 120). While this breadth of considerations makes an investigation seem both intimidating and potentially very messy, it also arouses more excitement in comparison to much narrower treatments from the transport studies tradition.

3.4.2 Transitions and the Multi-level Perspective (MLP)

Linked to the concept of complex systems is that of transition. This concept is used in diverse contexts – such as the transitions of post-Communist states which (may) involve democratisation,

marketisation and state/nation-building (Kuzio, 2001) or transitions to low carbon energy and economic systems (Hopkins, 2008, Robertson, 1999) or, for example, transitions to the widespread use of air conditioning systems (Shove et al., 2014). The essence of all transitions is large scale shifts in the dominant regime - and it is the regime or regimes of mobility that I am examining in my work. However, defining the concept is not easy with Genus and Coles arguing that the

> definition of transitions is problematic, for example in relation to the establishment of the start and end points of transitions. Reviewing the research it would appear that the characteristics of transitions differ from case study to case study, are identified with hindsight and can be represented by different sets of events. (2008: 1440)

With their critiques in mind – and considering in particular that I am examining a contemporary phenomenon rather than conducting a historical case-study - I now discuss one particular conceptual framework that has been used extensively to examine transitions and I explain why this is of relevance to my own work.

The Multi-level Perspective (MLP)

The Multi-level Perspective (MLP) analytical framework was developed originally by Rip and Kemp (1998) and then elaborated by Geels and other scholars with the aim of elucidating the nature of technological transitions – that is, shifts from the dominant use of one technology to another. Geels himself explains that the main premise of the perspective "is that transitions are non-linear processes that result from the interplay of multiple developments at three analytical levels: niches (the locus for radical innovations), socio-technical regimes (the locus of established practices and associated rules), and an exogenous socio-technical landscape" (2012: 472), while he notes elsewhere that the MLP is not "an ontological description of reality, but an analytic and heuristic framework" to understand technology transitions (2002: 1273). The overarching idea is that transitions occur when there are shifts at the landscape level creating 'windows of opportunity' which enable niche innovations to 'break through' and, through a mixture of substitution and configuration pathways, a new regime emerges. Figure 3.3 below is Geels' schematic which seeks to explain how transitions in socio-technical systems occur in MLP terms.

The framework has been applied widely to understand transitions in socio-technical regimes and Geels describes such regimes as being made up of three dimensions: "(i) socio-technical systems, i.e. the tangible elements needed for fulfil societal functions [e.g. transportation, communication, housing, energy supply, recreation, health care], (ii) social groups who maintain and reproduce

the elements and linkages of socio-technical systems, (iii) rules (understood as regimes) that guide and orient activities of actors and social groups." (2005a: 449).

One of Geels' earlier case studies (2002), drawing on insights from evolutionary economics (e.g. Winter and Nelson, 1982) and technology studies / actor-network theory (e.g. Law and Callon, 1992), was of the transition from sailing ships to steamships (1780-1900) and here he highlighted the importance of specialised actors and the 'loosening-up' of regime-level linkages so as to enable innovations to break through. Furthermore, in his study of the transition from horse-drawn carriages to automobiles in the USA (1860-1930), he argued that "transitions come about through the alignment and interaction of dynamics at all three [MLP] levels" (2005a: 469) and the dynamics arise through the interactions of various social groups with different values, interests and strategies. The framework was refined further still in Geels' examination of the breakthrough of rock 'n' roll to incorporate multiple niche-innovations and regimes and strong cultural components (2007), while very recent applications of the MLP have been to contemporary challenges around 'green' electricity systems (Geels, 2013) and the 'transition failure' of electric car experiments (Newman et al., 2014).

The framework has been critiqued widely with MLP proponents, Geels and Schot (2007), acknowledging (inter alia) the difficulty in applying the three conceptual levels empirically. While Whitmarsh highlights the contributions that the MLP has made "by providing a more integrated and systemic perspective on socio-technical change, based on detailed... case studies and theoretical literatures" (2012: 486), she also argues that the 'landscape level' remains "something of a 'black box' in which anything that does not readily fit at lower levels is placed" (ibid.: 485). She advocates integrating "natural and physical science and geographical perspectives" into MLP research so as to improve the theory (ibid.).

My own thinking at this juncture[85] is that there may be a danger of attempting to pull in too many dimensions and too much data into a single model, thus making the operationalization of the framework too unwieldy[86]. Finally, in applying the MLP to their case study of the dynamics of transition in urban form and personal transportation in Copenhagen over the last 60 years, Pineda and Vogel maintain that previous studies using MLP have assigned "too much explanatory power to technology in accounting for change and continuity" (2014: 19).

[85] In Chapters 7 and 8, I revisit this concern and then offer my own critique of the MLP on the basis of my research.

[86] In the introduction to this book, Geels advises that "[b]ecause socio-technical systems are complex, it is wise to limit one's ambitions": page 3 of GEELS, F. W. 2005b. *Technological transitions and system innovations : a co-evolutionary and socio-technical analysis* Edward Elgar

So, while I note the weaknesses and indeed complexities of the MLP, the attraction for me in applying it to my study is, firstly, it has been used fruitfully for other transport case-studies (see above and Geels, 2012), secondly, public bikes appear to be easily thought of as occupying a 'niche' (but growing) space in a multi-modal mobilities regime and therefore appear to be suitable for interrogation through a transitions (MLP) lens (while acknowledging the potential for a 'failed transition' (Davids, 1998)) and, thirdly, as Whitmarsh argues the MLP is strong on integrating distinct domains at the socio-technical regime level (markets and user preferences, science, policy, technology, culture etc.) and elucidating the shifting linkages between them. Given all of these reasons, it appears suitable for application to a case study of a public bike system (which I explain further in Chapter 4).

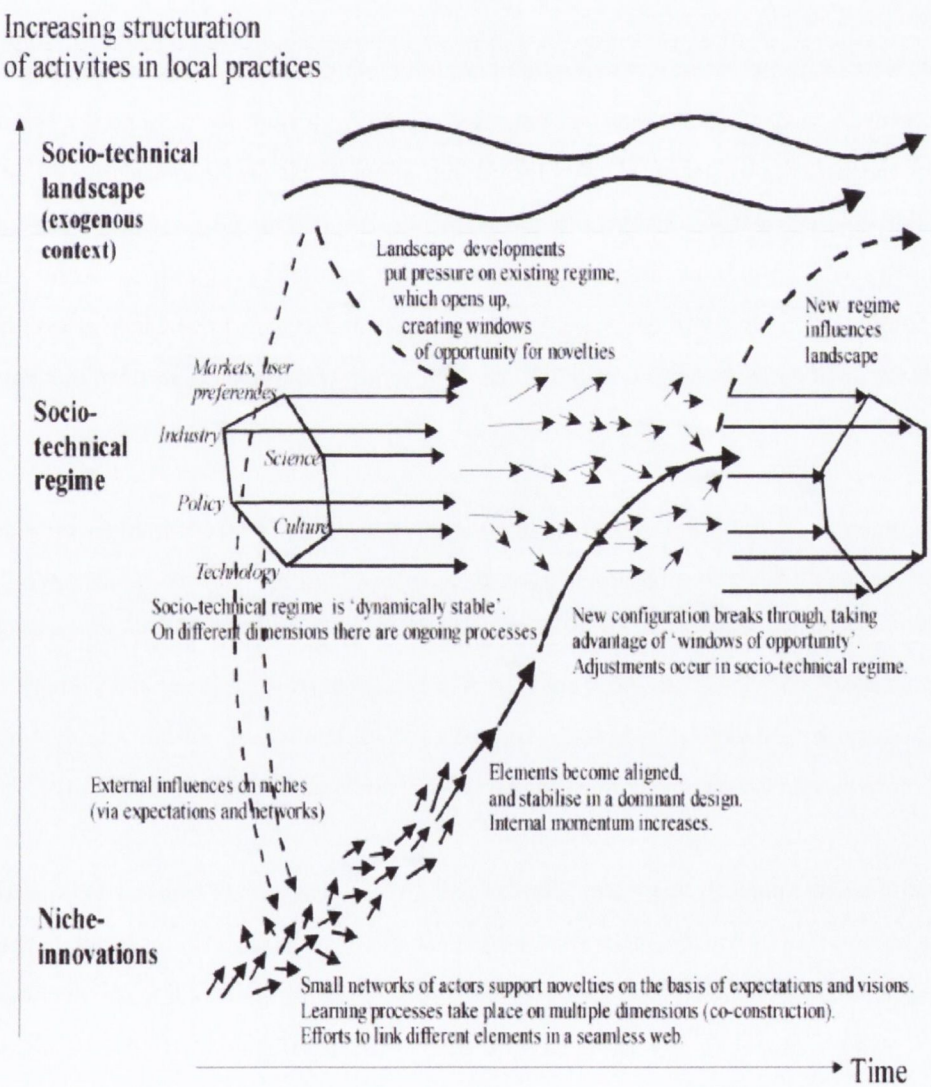

Figure 3.3 – Multi-level Perspective (MLP) schematic on transitions. (From Geels and Schot (2007))

3.4.3 'Regime-level' processes and wider theories

Picking up on the final point above regarding the domains (or dimensions) that MLP scholars examine, I discuss in this section a number of domains within which (and across which) 'regime-level' shifts or reconfigurations might potentially be occurring[87] in response to the introduction of a public bikes system. I also discuss the empirical questions that are raised by using an MLP framework as applied to public bikes. While the domains discussed below are diverse, they are unlikely to be exhaustive; the purpose at this juncture is to begin identifying the realms with which a public bike scheme might intersect as it nestles into place. I also engage with some additional theories that will shape my methodological approach and that my own study seeks to inform.

Markets and urban economies

The effects of public transport investment on land values, residential property prices / rents and commercial / economic activity has been examined by a number of scholars (e.g. Henneberry, 1998, RodrÍGuez and Targa, 2004). They have shown that there are a myriad of variables to consider when assessing effects and these include the (urban / suburban / rural) nature of the receiving environment and the period over which an impact is gauged (short-term / long-term).To reflect on an Irish historical example, Barry has described some of the wider effects of introducing a new form of mobility in the mid-19th century when the early horse omnibus services shaped residential choices in Dublin[88]. These services:

> involved large horse-drawn coaches operating on a predetermined route, running at fixed times.... [and] double-deck vehicles were pulled by two or more horses. Clondalkin, Rathmines, Terenure, Clontarf, Rathfarnham and Sandymount [suburbs of Dublin] were among the areas served. Fares were low, and patronage grew accordingly. The omnibus service and the subsequent trams liberated the lower middle class, who could now choose to live at a much further distance from their employment. (2014)

A related point made by Wickham (2006a: 136-137) is how public transport can extend the area of the pavement city (i.e. the area that people can easily walk around) by enabling them to hop on and off trams (in particular) or metro trains and then continue strolling almost seamlessly. One question that arises then is if public bikes create a similar effect and, therefore, if they could play a role in consolidating the city- as against helping to unbundle "territorialities of home, work,

[87] Or have occurred (or, perhaps even, may occur in the future).

[88] Note however that Barry manages to complete his article on "how people got around in 19th century Dublin" without mentioning cycling or bicycles or Dunlop's tyre factory in Dublin.

business, and leisure that had historically been closely integrated...(Sassen, 1996)" (Urry, 2006: 19). On commercial activity, assessments of the effects of transport investment can be skewed by inaccurate estimates by traders of how customers arrive: O'Connor et al. (2011) showed that Dublin city traders underestimated the proportion of customers arriving by bus, on foot and by bike, and overestimated those arriving by tram (in particular) and car.[89] On the effects of introducing public bikes, we might ask if shopping patterns or commercial activities or the attractiveness of particular residential settings shift in response to the siting of stations?

Advocacy, politics and policy

Scholars of social movements have turned their attention to the bicycle over recent years with Horton examining the bicycle's role in British feminist, socialist and anarchist movements (Horton, 2006, Horton, 2013), while Furness (2010) has focused more on the US context and on the 'Critical Mass'[90] and DIY[91] bike cultures in particular. Meanwhile, Aldred has written extensively on (UK) cycle activism and advocacy (2012d) and has examined the shifting composition of the constellation of cycle campaigning bodies. She argues that the addition of new on-line cycling blogging groups such as *Londoners on Bikes* created an "overall picture of an expanded and heterogeneous movement [and] [i]nterestingly, existing advocacy organisations have been both strengthened and challenged by new groups" (2013b: 200). What is completely unclear though is if or how the arrival of public bikes reshaped in any way the strength, priorities or practices of cycling advocacy groups; or, conversely, if these actors played a (significant) role in shaping the emergence, expansion or diffusion of such systems and indeed of supportive policies.

Infrastructures and regulations

According to Geels' elaborations of how socio-technical transitions occur,

> [t]he breakthrough from niche- to regime level does not take place at once, but through a sequence of steps. While the innovation is initially used in specialized technological or small market niches, it captures increasingly larger market niches. Wide diffusion thus occurs through a process of niche-accumulation... During this process... more elements

[89] Interestingly, their work also revealed a difference between the actual level of cycle access on Grafton Street (south inner city), 9%, as against Henry Street (north inner city), 3%, and they raised the point that "[o]nly 18 out of [the original] 44 Dublinbike stations are on the northside" – page 8 of O'CONNOR, D., NIX, J. & BRADSHAW, S. Shopping travel behaviour in Dublin city centre. Irish Transport Research Network, 30/Aug to 01/Sept 2011 2011 University College Cork.

[90] 'Critical mass' cycles are (generally) monthly urban gatherings of cyclists without any or much formal organisation that aim to celebrate cycling and "call attention to the dominant norms of bicycling and automobility". See Chapter 4 of FURNESS, Z. 2010. *One Less Car: Bicycling and the Politics of Automobility,* Philadelphia Temple University Press.

[91] 'Do It Yourself'.

> are created to support the innovation, e.g. infrastructures, regulations, cultural enthusiasm and user practices. The seamless web becomes increasingly stable and gains momentum, because an increasing number of elements is linked together. (Geels, 2005a: 452)

These ideas raise a number of crucial questions in regard to public bikes and my focus on Dublin. While it is undoubtedly the case that the paradigm guiding transport policy in Dublin shifted to some extent over the last two decades or so (Leahy, 2010) and with Dublin City Council, for example, constructing over 120 km of cycle lanes since 1990 (Caulfield, 2014: 217)[92], it is unclear what relationships (if any) might exist between the emergence of public bikes and the development of various (supportive) elements - infrastructural, regulatory or otherwise.

Of some relevance here also are the long-running and contentious debates on the pros and cons of segregating bicyclists from motorised traffic. Furness (2010) discusses the debates around John Forester's (2012) 'vehicular-cycling principle' and the counter-positions of advocating for dedicated cycling infrastructures, while Pucher et al. (2010) conducted a meta-analysis of the effects of various interventions on cycling and suggested positive correlations between cycle lanes or paths and levels of bike commuting. Most recently, Aldred and Jungnickel (2014) have added another layer to the debates by considering the impacts of particular interventions on cycling practices in relation to particular contexts (e.g. places with high or low existing cycling levels), in regard to particular meanings of cycling ('everyday' and 'mundane' or 'cool' and 'exotic' (2014: 84)), and in terms of the stage of the trajectory of cycling. Clearly there are many confounding factors in shaping the effects of introducing cycling facilities – but perhaps also in shaping the effects of introducing public bikes.

User practices and the 'Safety in Numbers' (SIN) theory

Referring again to Geels' theories above on the 'seamless web' of elements that gain momentum, I consider here the wider practices linked to public bike use. Jacobsen's widely cited[93] 'safety in numbers' (SIN) thesis posits that a "motorist is less likely to collide with a person walking and bicycling when there are more people walking or bicycling" (2003: 208), so given the sharp

[92] As discussed elsewhere, local cycling advocates have been very critical of many of the 'cycling facilities' making up this "120km" figure. The main criticisms focus on the inattention of authorities in addressing large and hostile junctions (DUBLIN CYCLING CAMPAIGN. 2011a. *'10 Worst' places in Dublin* [Online]. Available: http://www.dublincycling.ie/cycling/10worst [Accessed 03/Jan 2014].) and have criticised indicators (of 'km of facilities') as being a useful measure of progress.

[93] The result of a Google Scholar search indicated that Jacobsen's study has been cited 496 times. GOOGLE SCHOLAR. 2014. *Search terms: 'Safety in numbers'* [Online]. Available: http://scholar.google.com/scholar?hl=en&q=safety+in+numbers&btnG=&as_sdt=1%2C5&as_sdtp= [Accessed 07/Sept 2014].

increase in public biking[94] trips subsequent to the opening of many schemes (but not all – see Fishman et al. (2012a) on the Brisbane PBSS), the question that arises is: what effect does the introduction of a scheme have on road safety?

Intriguingly, Murphy and Usher's research on the users of *dublinbikes* scheme, revealed that "93.8% of respondents (who were also car drivers[95]) said that using the dublinbikes scheme had raised their awareness of cyclists on the road while driving" (2013: 20). While noting that there could be a social desirability bias (Grimm, 2010) at play here in that questionnaire respondents may have been inclined to give a favourable-sounding answer on this topic, the result is very interesting as it suggests a wider 'systems'-type effect associated with the public bikes. I propose to examine this question in my research.

Coalitions, techno-scientific knowledge and knowledge spill-overs

Blomkvist's analysis of the processes leading to the implementation of *The Road Plan for Sweden*, a program which he argues shaped the path to Sweden's mass motorization, stressed the role of the international road and car lobby and the formation of new alliances: "[j]oining motorists were commercial interests related to road building, local and regional road agencies, and most important, the Royal Corps of Water- and Road Builders, whose members included university-educated civil engineers and members of the Swedish Technology Association" (2004: 277). Relatedly, Geels stresses the role of new social groups in technological transitions using examples of professional ship owners, shipbrokers and insurance companies in his study of the transition from sailing ships to steamships (2002: 1264).

Both of these case-studies raise new questions on the processes that could be playing out with public bikes. While we know already that actors from the outdoor advertising industry moved into the mobility arena (Chapter 2), we do not know if anyone else did or if any new (and influential) alliances formed. Further questions arise on the creation and dissemination of new techno-scientific knowledges - within the transport (planning) sector for example; and perhaps also questions around 'knowledge spillover'. While that concept is normally applied to industry and 'having a cluster of firms around a particular activity in a region' (Ryan and Giblin, 2012: 1325), I pose the question: how might the public bike phenomenon give rise to new technological / knowledge spill-overs? Currently we do not know.

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[94] As opposed to all types of (city centre) biking trips.

[95] Their study also revealed that "80.5% of their [360] survey respondents were also car drivers". Page 20 of MURPHY, E. & USHER, J. 2013. The Role of Bicycle-Sharing in the City: Analysis of the Irish Experience. *International Journal of Sustainable Transportation*, null-null.

System resilience

A further concept I wish to raise here is resilience: what Holling defined in an ecological context as "determin[ing] the persistence of relationships within a system and [that] is a measure of the ability of these systems to absorb changes... and still persist" (1973: 17). In considering transitions we are interested in both the resilience of the pre-existing regime which a niche technology is seeking to break into, and that of the new order. It is the lack of resilience of transport systems which is now coming under the scrutiny of mobilities scholars such as Sheller (2013) and those studying the disruptions to air travel triggered by Iceland's Eyjafjallajokull's eruptions (e.g. Birtchnell and Buscher, 2011: and other papers in the same Mobilities issue). Additionally, Chen and Miller-Hooks (2012) have explored the ability of an intermodal *freight transport* network to recover from disruptions due to natural or human-caused disasters, while relatedly McKinnon (2006) examined the likely consequences in the UK of a complete week-long cessation of trucking services drawing on analyses of both the 1979 truck drivers' strike and the 'fuel crisis' of 2000. More recently still the World Economic Forum (2014) has highlighted how global risks are not only interconnected but also have systemic impacts.

In regards to research into the resilience of systems in Ireland, Thomas et al. (2013) developed a framework for assessing the resilience *of health systems*, taking Ireland as a test case. However, they operationalise the concept of resilience in a narrow sense, focusing only on how the system responds to *an economic crisis;* crises not considered include natural disasters such as flooding, storms and pandemics. Geographers have however started to consider the vulnerabilities of the entire coast of Ireland in the context of projected sea-level rises (Devoy, 2008), while Korowicz, from the non-government organisation and sustainability think-tank 'Feasta', has considered the resilience of Irish society in the face of multiple crises (Feasta, 2011).

Returning now to public bikes, a key question for me is: how resilient is a public bike system in the face of various crises? On the basis of my initial review of the historical material on public bikes (Chapter 2) and my examination of the literature above, it may well be the case that such systems are highly vulnerable given their dependencies on multiple other complex systems (broadband, electricity, banking etc.), so in my empirical work I aim to shed further light on the vulnerable or resilient nature of this new mobility system.

Culture

Finally, and referring back to Figure 3.3 above, a further (multi-pronged and very broad!) domain that the MLP seeks to integrate into its model is that of culture. In the case of the diffusion of 'car culture' in the US in the 1930s, Geels talks about that culture being "supported by new

institutions such as fast food restaurants on highways, shopping malls on the edge of cities, drive-in movies [and] [t]ouring with automobiles developed into a popular recreation activity." (2005a: 468). The empirical questions on culture which arise for me in regards to the arrival of public bikes relate to the habits that might have emerged but also, for example, the media and other representations of public bike users that become observable. Of potential relevance here also is the transfer of ideologies that may accompany technologies and I have in mind here the cases of the transfer of the American traffic engineering ideology into Sweden (Blomkvist, 2004) and into Australia (Davison, 2004). The question that arises then is: have any particular ideologies co-evolved with the growth and spread of public bike systems?

3.5 Conclusions: research aims

On the basis of my review of the literature in sections 3.2, 3.3 and 3.4 above, the multiplicity of questions raised can be distilled down to the following three overarching questions:

(i) What is the nature of the freedoms (and constraints) that public bikers associate with this form of mobility?

(ii) What is distinctive about public bike journey experiences as compared with those of other urban modes?

(iii) What processes are playing out as a public bike system beds in and what might be the 'ripple effects' of introducing a system (if indeed such a metaphor is apt)?

On this last question, while I propose to use a transitions perspective – and, more specifically, a MLP framework – to elucidate the processes playing out, my interest is less about following the form of the technological system which develops but more about tracking the reshapings of the other domains connected to the technological domain.

Finally, two further issues on which I wanted to shed more light were the reasons underpinning the success of the public bike system in Dublin (in terms of the high daily use of bikes) and the (apparent) lack of vandalism of bikes. While these were not explicit research aims, they were questions that many media reports obsessed about (as discussed in Chapter 2) so I sought to develop original positions on these partly unanswered questions.

Chapter 4 – Methodology

4.1 Introduction

I begin this chapter by explaining how I decided on a research design to investigate the journey experience questions that I had already identified, while simultaneously I pondered on broader (systems) questions that were beginning to emerge. After critically reviewing some of methods employed by other mobilities scholars, I describe those that I used in prising open the journey experiences of *dublinbikers,* before moving on to the (more difficult) realm of investigating the 'systems' processes, as I call them, associated with the embedding of the *dublinbikes* system in Dublin.

Note that a schematic, showing how my overarching research design can be thought of as two separate case studies that slightly overlap, is shown in section 4.6 below.

4.2 Research design (journey experiences)

4.2.1 Two cities or one?

The notion of wanting to understand what, if anything, was distinctive about public bike journeys prompted me to consider a comparative research design – that is, to investigate how journey experiences on public bikes compared with those on the bus, tram or train, on foot, in a car or even on an ordinary bicycle. Another dimension of the research design I deliberated on was whether or not to conduct comparative research of journeys *across two cities (or more)*, either while focusing only on public bike journeys or focusing on both public bike journeys and those by other urban travel modes. The advantage of a multi-city approach would have been to enable me to reveal common or contrasting experiences associated with public biking in several cities and, interestingly, Cochoy et al. (2014) recently adopted a two-city approach (Gothenburg and Toulouse) in examining mundane 'pedestrian logistics'[96]. However their focus was narrowed down to just two streets, one in each city. Since I was interested in more city-wide (or, at least, city centre-wide) journey experiences, I deduced that a two-city approach would be unsuitable

[96] Other work by these scholars has compared public bikes across the same two cites, the interim results of which were discussed as a conference presentation: DUCOURANT, H. & COCHOY, F. 2013. Funny bikes. Highlighting some issues of citizen logistics through video-taped bike rental stations. *Mobility Futures.* Lancaster University, United Kingdom.

because the breadth of the work would become unmanageable, in terms of the multiple (sensory) dimensions already identifiable in just one mode of travelling (as per Chapter 3) but also as a result of my growing desire to understand the broader 'systems processes' associated with embedding the new socio-technical system in a city.

4.2.2 Comparing many modes or concentrating on one?

To help with the process of crystallising my research design, I conducted nine pilot interviews with a focus on everyday journeys. Of the nine, five were friends or family while four were from a company (a semi-state body) for whom I had previously carried out work. The interviews were short (10-20 minutes) and not recorded so as to assist with keeping everything informal. I asked participants about their quotidian movements which included commutes, other 'utility trips' and further (leisure) journeys. In Appendix 4.1 I list the interviewees and highlight the main travel modes they spoke about.

A number of early findings emerged which I discuss here because they shaped the direction of my research. Firstly, nearly all respondents had quite multi-modal lives with the exact mixture shaped by, inter alia, traffic congestion, the weather, tending to family duties and random accidents (as, for example, when the causeway over a local estuary disintegrated thus closing the main Dublin to Belfast rail-line that ran along it[97]). Secondly, respondents raised an extremely diverse array of themes and stories related to mundane journeys. Thirdly, and to give a little more detail, respondents recounted experiences in strikingly multi-sensory ways - that is through:

- observations ("of posters for gigs" seen from the top decks of buses, "of people using three-legged stools on congested trains", "of shady characters on the quays", "of views of the sea" on foot...);
- sounds (of silence and "revving of motorbikes", "hearing various accents and conversations" on the bus, and "overhearing mobile conversations" on the train);
- smells and tastes (the "fresh air of the sea" and of coffee en route);
- en-route musings (for the car driver "car garages – how are their sales doing?", from the top deck of the bus "imagining what goes on in adjacent residences");
- feelings (of "control over the journey" while walking, "freedom to escape congestion" while bicycling versus being in a car or in public transport, "comfort" when securing a train seat);
- meanings (that the journey acts as "a transition from home space to work space");

[97] See BRAY, A. 2009. Packed train seconds from disaster in bridge collapse *Irish Independent*, 22/Aug 2009.

- sociabilities ("chatting with one's motorbike pillion passenger at low speeds", the non-talking on long-distance bus trips, for train travellers "it is generally when something happens" such as when the DART[98] is broken down, when snow falls etc...").

These findings shaped my research design in that I knew then that if I sought to examine all modes with equal attention, my focus would be spread too thinly; it made more sense to concentrate on one mode. I then revisited my original hypothesis (on the sociability of urban biking versus other modes), and decided to concentrate on the users of the (then) recently launched *dublinbikes* scheme so as to keep the focus tight. However, my pilot interview findings steered me to seek to transcend exploring user experiences of sociability only; I wanted to understand the multi-sensory experiences of being a public biker in my case study. So as to retain some element of comparability, I also decided that, where possible, I would seek to compare particular sensory aspects of a person's public biking journey experience with those of journeys they took by other modes.

In summary, prising open the journey experience of public bikers was to be one main strand of my case study: the micro-sociological strand. Later on in this chapter (section 4.5), I describe the other strand of the case-study, but first of all I segue into a discussion of research methods for the first strand of work.

4.3 Methods considered (journey experiences)

I consider here the methodological approaches of a number of mobilities scholars and discuss how their work shaped my own choice of methods. Note that this discussion links with my reviews of the literature on journey experiences in 3.3 above (and, to a lesser extent, in 3.2).

4.3.1 Traditional observational approaches

In their research on the social practices around commuters' uses of mobile phones on suburban trains, Berry and Hamilton (2010) combined informal observations with surveys designed to shed light on what people report they actually do with their phones on trains. Another public transport researcher, Naukkarinen, also used participant observation as the basis for his analysis of the experiences on trams in cities including Tallinn, Hanover, Munich, Prague and Vienna (2003: 250); while Symes, in carrying out his (covert) ethnography of student commuting on Sydney's

[98] DART stands for Dublin Area Rapid Transit system, the electrified suburban train running alongside Dublin's coast. See, for example: WATERS, C. D., FARRELL, M., GRAINGER, R. P., LEAHY, P. J. & MELLITT, B. 1988. Dublin Area Rapid Transit. *Electric Power Applications, IEE Proceedings B,* 135, 134-150.

suburban trains "remain[ed], in so far as it was possible to do so, inscrutable and inconspicuous... for all intents and purposes just another passenger in the throng of commuting" (2007: 445). Finally, Vannini is another proponent of traditional ethnographic methods which he used in his investigation of queues at small island ferry terminals in British Columbia (2011). Mobilities has therefore a strong tradition in qualitative methods, supported in some cases by quantitative methods[99], and the main advantage of the (unstructured) observational work is that, compared to surveys, for example, it is particularly conducive to an exploratory phase of research when it is very unclear what one expects to find – i.e. the learning is in the seeing.

Following these scholars, I decided to integrate a component of observational work into my suite of methods since I wanted to observe directly the ((un)sociable) behaviours of public bikers – as well as tapping into their experiences (see 4.4.6 below). Logically then, there were two main options for observing *dublinbikers*. The first was to loiter around stations and observe particularly[100] those *dublinbikers* taking and returning bikes. While relatively straight-forward to organise, it suffers from the weakness that one "fail[s] to access the environmental perception and experience of (other) members" as Kusenbach (2003) puts it – i.e. one only sees a snap-shot of their journeys. The second option was 'to get myself mobile' as I discuss in the next section.

4.3.2 'Go-alongs' and video ethnography

'Go-alongs'

The 'go-along' method has been described in detail by Kusenbach and, essentially, it involves

> field workers accompany[ing] individual informants on their 'natural outings, and – through asking questions, listening and observing – actively explor[ing] their subjects' stream of experiences and practices as they move through, and interact with, their physical and social environment" (2003: 463).

The method has its cycling equivalent and is known (at least in cycling ethnographic circles) as the 'ride-along'. Spinney maintains that both the walking and cycling versions of the 'go along' tool aim to foreground "experiential, affective and material aspects of practice which are often marginalised in less participative modes such as surveys" (2011: 165). I was initially very much

[99] Interestingly though, Gatersleben and Uzzell used quantitative approaches with their use of surveys to examine affective experiences of car, public transport, walking and cycling commuters. GATERSLEBEN, B. & UZZELL, D. 2007. Affective Appraisals of the Daily Commute. *Environment and Behavior,* 39, 416-431.

[100] But not exclusively those *dublinbikes* users (un)docking bikes, since other *dublinbikers* may be simply passing by those locations while out and about on their public biking journeys.

persuaded by these scholars' arguments and I leaned strongly towards using the 'go-along' method and, further, I noted that its walking version formed part of the multi-modal approach used in the *Understanding Walking and Cycling Study* in Leeds, Leicester, Worcester and Lancaster (Pooley, 2011b: 3). However I was also cognisant of the findings[101] of Lawson et al. who concluded that "[c]ycling [in Dublin] is truly perceived as an unsafe mode of travel compared to driving even by the existing cyclists who consider themselves to be competent users of the mode" (2013b: 510). Therefore I began to think that a putative sample of *dublinbikers* who might be prepared to participate in 'go-alongs' could well end up being quite biased towards those who are more comfortable riding in heavy traffic and chatting as they move along – i.e. biased towards confident and skilled cyclists[102]. Additionally Spinney has also argued that while the technique is suitable for researching the experiences of racing and touring cyclists, "in metropolitan locations a ride-along is often either unsafe or risks precluding the very practice it seeks to investigate" (2011: 166). So, I decided against using the method.

Video-ethnography

The next method I considered was video ethnography. This has been used in particular by Laurier et al. (2008) in cars so as to shed light on the routine practices, diverse social activities and 'habitations' of car drivers and their passengers. Besides the technical challenges of fixing cameras in optimal positions, another difficulty I sense with the method is the induced change in behaviours of car occupants in response to being filmed at close quarters and this shortcoming is acknowledged by the authors when they reported that participants become conscious of swearing and commented that "'the kids didn't fight as much as they usually do'" (ibid.: 5). In this variation on the 'observer effect' (Kazdin, 1982), the recording method changes (to some degree at least) that which is being investigated.

The application of video ethnography to the urban cycling experience has been led particularly by Spinney (2010, 2011) building on his ethnographic work with racing and touring cyclists (2006). There are, he maintains

[101] Their work was based on a self-administered survey "conducted over a 3 month period between 7th March and 1st June, 2011 [and] receiv[ed] 1954 responses" and the information was collected "from existing cyclists, who regularly cycled in Dublin within the previous 12 months." Page 502 of LAWSON, A. R., PAKRASHI, V., GHOSH, B. & SZETO, W. Y. 2013b. Perception of safety of cyclists in Dublin City. *Accident Analysis & Prevention,* 50, 499-511.

[102] A possible counter argument to this reasoning is that those who might choose to participate in 'go alongs' might also fit the profile of the more novice cyclists who seek out 'bike buddies' (i.e. experienced cyclist companions who share the same commuting route as them) so as to learn from more competent cyclists on the road. See: DUBLIN CYCLING CAMPAIGN. No date given. *Bike Buddy Scheme* [Online]. Available: http://www.dublincycling.ie/cycling/bike-buddy [Accessed 12/Sept 2014].

> three ways in which mobile video ethnography can contribute to research in the new mobilities paradigm: video as a way of 'seeing there' (Laurier, 2010) and 'feeling there' when you can't be there; video as a way of apprehending fleeting moments of mobile experience; and video as a tool to extend sensory vocabularies... [and] mobile video ethnography can contribute to a new mobilities agenda by facilitating more nuanced understandings of daily corporeal mobility which move beyond seeing instrumental factors as solely determining why and how people move around. (2011: 163)

More recently[103] McIlvenny made video recordings of commuter and family bike rides in Sweden and Denmark using cameras on board both the participant researcher's bike and the participants' bikes, and he argues that the method "gives new insights into the interactional mobility practices and mobile formations of cyclists in situ" (2014: 152). There are undoubtedly, I think, great strengths of bicycle based video ethnographies in capturing the fleeting moments of rides. However I was dissuaded from employing the method because my desire was really to engage with several dozen *dublinbikers* so as to tap into a wider experience base, and where the method appears to have been used most fruitfully it either seems to be with a very small number of participants (as with McIlvenny's work which entailed "multiple video cameras mounted in various configurations" (2014: 139)) or else it is bound up with mounting cameras onto participants' helmets (as with the work of Brown et al. (2008) in mountain-biking and walking contexts). For me an approach which would have entailed mounting one or more cameras on bikes not owned by the participants and fixing 'head-cams' to their (generally helmetless (Deegan, 2011)) heads (or both) did not appeal to me. Since a particular focus of mine was to understand sociable encounters on bikes, I felt that the incorporation of on-board / on-head cameras into participants' lives would be far too intrusive and would have interfered with the very (in some cases delicate, in other cases spontaneous) experiences I aimed to capture. Furthermore, the use of head-cams raises many additional ethical challenges, such as those around getting the consent of members of the public to appear in footage as discussed by Brown (2008: sections 4.1 to 4.10). On those grounds I decided not to use video.

Having said that I recognise the value of the work of professional film-makers Cahill and Butler (2014) who recently produced a two and a half minute long film which captures some of the (positive) ordinary experiences of six *dublinbikers*[104]. The value of the work is to record visually

[103] I.e. after my field work was complete!

[104] This film was funded / supported by Dublin City Council and Dublin Cycling Campaign (DCC) and hence (and understandably) it presents an uncritical view of the public bike scheme. It is a promotional film which forms part of larger suite of films, viewable here: DUBLIN CYCLING CAMPAIGN. 2014a. *dublin cycling campaign* [Online]. Available: https://www.youtube.com/user/CyclingCampaign [Accessed 12/Sept 2014].

some of the aspects of the journey such as the freedom and convenience that users associated with this form of mobility. I return to these themes and others in my empirical chapters. Incidentally and finally, the video work of artist Michelle Browne also shines a light on public transport experiences in Dublin with her *Luastube* film highlighting "our desire to maintain personal space in the public sphere" (Browne, 2007). The film shows Michelle disappear inside her own dress after it magically metamorphoses into a tall tube that is hooked onto the ceiling of the moving tram. While this transformation all takes place inside a busy Dublin tram, the footage (filmed covertly it seems) shows most of the commuters completely nonplussed as they are insulated from others inside their own private electronic bubbles.

4.3.3 Choosing from a cornucopia of methods

Besides the methods discussed above, there are many more that have co-evolved with the mobilities turn in the social sciences (Spinney, 2011), some of which are potentially useful for a public bike researcher. I briefly comment on some of these here before stating what methods I decided to use.

In contrast to Laurier's in-car video ethnography (2004: and other work referenced earlier), Barker used "personal diaries, photographs, in-depth interviews and surveys...to explor[e] how cars are not only journey spaces for children, but are also sites for play, relaxation, homework... and the consumption of commodities" (2009: 59), while Corcoran et al. captured children's suburban experiences through focus group discussions and short essays written by the children (2009). On the multiplicity of methods now available, Spinney argues that there has now been

> an explosion of empirical work using innovative methods such as travel diaries..., auto-ethnography..., time-space mapping..., mobile ethnography and video ethnography... [and the] appearance of two edited collections on the subject (Downing & Tenney, 2008; Fincham et al., 2010) ... is testament to the vigour with which the challenge is being taken up. (2011: 162)

I briefly considered using travel diaries with the aim of capturing more of the detail of *dublinbikers'* (quite short – typically just 13 minutes (J.C. Decaux and Dublin City Council, 2014a)) journeys, but I decided against them because I wanted to minimise the on-going time commitment for participants so as to maximise the number of responses yielded. Furthermore travel time diary work appears to work best in capturing *the rhythms of daily life* rather than the micro-experiences occurring within short trips (see, for example, Axhausen et al., 2002). While I recognise that almost any method could contribute to prising open journey experiences, I chose in

the end perhaps the most traditional of methods for social scientists: one-to-one interviews. My pilot interviews revealed that the method can yield rich data on mobile lives and it enables the researcher to switch, almost seamlessly, to delving into comparative experiences with multiple other travel modes. While acknowledging that the interview may not pick up on Spinney's "fleeting moments of mobile experience" that video can capture (as quoted above), an advantage is that there are very few 'technological barriers' to using the method (bar using the sound recorder correctly). There is though the need to learn the craft of interviewing (Kvale and Svend, 2009) and I return to this point at the end of the chapter where I discuss the advantages and limitations of my methods used. Furthermore and perhaps most crucially, a one to one interview gives the researcher 'efficient' access to the meanings of journeys for a decent sized sample of participants – if it does not seem too incongruous to talk about efficiency and meanings together! Finally, as mentioned earlier, I also decided to incorporate an observational dimension into my work so as to shine a light on (what certainly started out as) my pet topic: the sociability or otherwise of being a bicyclist.

4.4 Prising open journeys: methods pursued, a step-by-step account

I describe in this section the steps taken in employing my journey-opening methods. I start with some reflections on issues of reflexivity.

4.4.1 Reflexivity issues

While on the one hand my "voice is that of the 'disinterested scientist'" (Guba and Lincoln, 1994: 115) which informs decision-makers, policy-makers, and agents of change – i.e. of the position of the (post-)positivist paradigm, I am also both an occasional *dublinbikes* user[105] and a long-standing advocate working to re-centre the bicycle in Irish transport policy. Further, my (voluntary) campaigning became intertwined with work as a transport consultant and the contracts I executed dealt with, what I believed were, 'enlightened' transport policies for public bodies (e.g. Buchanan, 2007b, Buchanan, 2007a, Ó Tuama, 2011). It is fair to say then that I began my research with a strong conviction that a more de-motorised city was 'a good thing' on the grounds that, following Illich (1974), it was more equitable; following Plowden and Hillman (1984), safer; and following Engwicht (1999), more convivial. Furthermore, as discussed in section 1.1, as a daily urban cyclist I felt the practice brought one into closer contact with other city-goers and I

[105] I am also an occasional car driver, car passenger and user of buses, trams and trains – and ferries and (more occasionally still) planes. For the vast majority of my urban journeys, I use my own bicycle. I use the public bikes on those rarer occasions when my own bike has been left on the other side of the city and needs to be picked up, or when my own is out of action. On other rarer occasions still, I give my *dublinbikes* card to a bike-less friend so that he or she can cycle with me.

theorised that the new public bicycle scheme could have interesting – and even positive - effects on the social lives of Dubliners. As described in the thesis, the scope of my investigations broadened out beyond the social aspects of travel – but during the work, I was acutely aware of my own values on mobility matters. I had fewer preconceptions though as to the nature of any 'systems' effects that might have been playing out as the public bike system settled in.

In summary, I was conscious of the values I brought to the study, particularly when reflecting on certain emerging findings that appeared to conflict with some of my own pre-conceptions. However, in a Weberian sense (Weber, 1949), I sought to conduct the work in such a way as to maximise its objectivity and replicability. These issues were ongoing sources of discussion with my supervisor over the course of the research.

4.4.2 Respondent recruitment

On-street loitering – Set 1

There were 44 *dublinbikes* docking stations[106] in operation during the period in which my interviews took place (January 2012 to July 2013)[107]. To seek out volunteers I loitered at five of these stations at various times of the day (morning, lunch-time, evening-time and night-time) spread over four separate periods in 2012 (January, February, April and November). The stations were not randomly picked: I chose stations in the centre and at the periphery of the 'DB zone'[108] and aimed to have stations from functionally distinct districts; so of the three stations located in the centre of the DB zone, one was in a main shopping district, another in the 'cultural quarter', and a further one alongside one of the main rail stations which was also very near to one of the universities; while the other two peripheral stations were located near the southern edge of the DB zone in a 'mixed use' areas[109] (see Appendix 4.2). The logic of choosing the southern periphery rather than the northern periphery was that 26 of the 44 stations (i.e. 59%) were located south of the river while only 18 of the 44 (i.e. 41%) were located to the north of the river (see Appendix 4.3). With the benefit of hindsight, while the sample of stations captured quite a broad array of districts in the city centre, it might have been additionally insightful to loiter at a peripheral station located in a strongly disadvantaged area so as to observe interactions and meet local users

[106] Just to clarify the terminology, within each *station* (or *docking station*) there are several dozen *stands* each of which holds one public bicycle in place. *J.C. DECAUX & DUBLIN CITY COUNCIL. 2014d. Stands [Online]. Available: http://www.dublinbikes.ie/How-does-it-work/Stations/Stands [Accessed 08/Sept 2014].*

[107] The first (of the 58) new stations of the expansion of the *dublinbikes* opened in November 2013. RYAN, N. 2013. First new Dublin Bikes stations launched, part of €35 million expansion. *thejournal.ie*, 28/November 2013.

[108] I use 'DB zone' as short-hand in this thesis to denote the zone which covers the original 44 *dublinbikes* stations (but not some of the stations in the expanded zone as is shown in Appendix 8.1).

[109] That is, the nearby areas comprised mixed residential / businesses districts (including hotels and hostels).

there[110]. However, the important point here is that I used a quota-type sampling strategy to find the categories of people I was most interested in – see below.

My technique for recruiting participants was simply to stand alongside stations and approach those who were either seeking to remove bikes from stations or return them. I developed (what the marketeers would call) a simple elevator pitch along the lines of – *Hi, I'm a researcher examining dublinbikes. Would you consider participating in an interview at a time of your choosing over the coming weeks?* - and I handed out a letter, printed on official Trinity College Dublin headed paper, and containing more information on my work and my full contact details (see Appendix 4.4). The recruitment of respondents was generally more straight-forward than initially assumed, with many *dublinbikes* users texting[111], emailing or phoning me within a day or two volunteering to be interviewed. While for various mundane reasons[112], some of these contacts did not result in an interview, this strand of the recruitment process ended up yielding thirty one persons for interviews, details below. I estimate that the response rate for this element of work - expressed in percentage terms as: *(the number of interviews held)/(the number of letters I handed out)* - was around 15 to 20%. One consequence of the ease of recruiting volunteers was that I spent less time observing movements around the docking stations (see later) than I would have done had volunteer recruitment proved more difficult! The one group that I was unsuccessful in recruiting was tourists. My explanation is that, firstly, there were fewer tourists using the bikes in the (winter and spring) periods I spent loitering than in the summer months and, secondly, of those tourists using the bikes that I did speak to, none were prepared to meet me on a subsequent day to participate in an interview, possibly because they were on short 'city-breaks' and time was limited. On reflection, a more flexible approach of persuading people to participate and then doing interviews straight away (even on the street) might well have proven a more successful tactic for the hard-to-reach categories of *dublinbikes* users.

Hand-delivery of letters to one district in the city – Set 2

Additionally, I delivered letters to approximately 200 residences (see Appendix 4.5) and around half a dozen commercial premises (see Appendix 4.6) in an area with three *dublinbikes* stations nearby: DB stations #18, #34 and #43 (see Appendix 4.3). I then waited for volunteers to contact me. My rationale in distributing letters seeking interviewees in this way was because I also wished to understand the local (street) effects, if any, of introducing the system to a particular (pre-

[110] There are perhaps two or three docking stations which meet this description.

[111] I provided my own mobile phone number on the explanatory letter. While this proved to be an efficient way to arrange meeting times with respondents, I did end up receiving a series of slightly odd/crank text messages from one person.

[112] Some potential respondents' schedules changed after the initial contact and, in other cases, my own work commitments shifted around with the result that some interviews never materialised.

dominantly residential) area in the city. This question on 'street effects' was, essentially, a supplementary set of questions in addition to those posed to the 'Set 1' group above (Appendix 4.7).

I bumped into some residents while posting letters and was also able to give them a quick face-to-face explanation of what my research was about and this seemed to help with recruitment. All in all, the direct postal method yielded nine interviewees. All but two of these nine interviewees used the *dublinbikes* themselves[113]. I estimate that the response rate for this element of work - expressed in percentage terms as: *(the number of interviews held)/(the number of letters I posted to residences)* - was just under 10%.

Sampling strategy and thematic exhaustion

I used non-probability (or non-random) sampling to select my respondents. More specifically, I used a quota-type sampling strategy so as to interview at least two men and two women in each of the decade age bands: 20s, 30s, 40s, 50s and then a further band of 60+ years of age. This approach was chosen so as to tap into experiences ranging as widely as possible across the age bands. A further categorisation I sought to use in my sampling, which was developed over the first half-dozen or so interviews, was to divide interviewees on the basis of who used the public bikes for commuting (to work or college) as against who used the public bikes for non-commuting purposes. However this simple categorisation appeared to break down as I conducted more interviews, since many *dublinbikers* used bikes for a mixture of purposes, and even some single journeys blended 'utility-like' characteristics with a more leisurely dimension as I explain in Chapter 5. Upon starting out, a class dimension was not especially important to me for my research since my focus on the journeys was to understand the sensory and emotional experiences of travel. Therefore, my sampling approach did not include any explicit socio-economic dimension.

I was also guided by the approach of continuing to interview respondents until 'thematic exhaustion' was reached - i.e. 'saturation' or the point at which no new information or themes are observed in the data (Guest et al., 2006). So, to a degree, I conducted a very simple analysis of my data as I proceeded with interviewees, which fed back into my respondent recruitment work. In regard to age and gender, by far the most difficult group to recruit was respondents over 60, especially women. In the end I interviewed just two men over 60 (one of whom (from 'Set 2') did not use the *dublinbikes*) and one woman over 60, and over the course of the recruitment process I

[113] Two of the respondent residents did not use the public bikes but were happy to offer their reflections on the scheme in a local residential context: one a man in his 40s, the other a man in the 60+ category.

turned down many volunteers who contacted me - mainly males in their 20s, 30 and 40s (who are over-represented in the *dublinbikes* figures according to Murphy and Usher (2013)) – before finally finding the (near) desired age spread. By the end of my interviewing, in addition to my 9 pilot respondents discussed earlier, I had interviewed 35 persons one-to-one, and a further 5 persons participated in a focus group session. See Table 4.1 below.

A - All respondents			
	Men	Women	Total
20s	4	2	6
30s	6	6	12
40s	7	2	9
50s	7	3	10
60+	2	1	3
	26	14	40
	65%	35%	

B - Respondents who used *dublinbikes*			
	Men	Women	Total
20s	4	2	6
30s	6	6	12
40s	6	2	8
50s	7	3	10
60+	1	1	2
	24	14	38
	63%	37%	

Table 4.1 – Gender and ages of respondents (A – All respondents; B – dublinbikes users only)

4.4.3 Interview settings, types and questions

I conducted my interviews in a number of different settings, the rationale being to make it as convenient as possible for respondents to partake around their own (sometimes very busy) schedules. In roughly descending order of the frequency of use of particular settings, I conducted interviews in: a spare room within the Sociology Department of Trinity College Dublin, hotel lobby areas, hotel bars, cafés (some adjoining a cinema), pubs, university/college canteens, a workplace canteen (for the focus group), in St. Stephen's Green[114], alongside Trinity College's cricket pitch and in a respondent's own home. The diversity of settings worked well with a few exceptions: one or two cafés were noisy and the respondent interviewed at home was minding a demanding baby – the only way he could eke out the time to take part in an interview – so some (small) elements of some recordings were slightly inaudible. All interviews were recorded with the knowledge of the participant (i.e. as stated in the letters circulated (Appendices 4.4 - 4.6), through using an obvious-looking sound recorder perched in front of us, and my announcing at the start of each interview "I am now starting recording"). Therefore I did not seek signed consent forms from participants.

[114] A popular public park in the south city centre.OFFICE OF PUBLIC WORKS (OPW). 2014. *St Stephens Green* [Online]. Available: http://www.heritageireland.ie/en/dublin/ststephensgreen/ [Accessed 13/Sept 2014].

My aim in interviewing was to find out about people's journeys generally and their *dublinbikes'* journeys in particular. I also wanted to find out the meanings the journeys held for them. I chose to conduct semi-structured interviews because, like Rabionet, there were some specific topics I wanted to explore "but at the same time I want[ed] to hear their stories" (2011: 564). I started each interview with a brief introduction of myself and the aims of my work and my technique then was to start by asking interviewees about their most recent *dublinbikes* journey(s) and then to use various prompts and further questions to encourage them to elaborate on their public bike experiences and, crucially, to compare them to other journey experiences they have. I also asked for their opinions on the scheme more generally. Finally for Set 2, the interviewees living very close to the public bike stations, I also asked them about their impressions of the local effect of bringing public bicycles into their area. As noted in Table 4.1 above, I interviewed two respondents living close to the *dublinbikes* (i.e. from 'Set 2') who did not use the system. Those interviews obviously focused on the neighbourhood dimensions of the system as opposed to personal public-biking experiences.

A copy of my list of prompts / questions for my semi-structured interviews is provided in Appendix 4.7. While I considered using further prompts such as a map of the city to help stimulate discussion on respondents' journeys, in the end it was not needed as interviewees were talkative about their experiences and opinions. As regards 'the craft of interviewing', as mentioned above, there was an undoubted sense as the interviews progressed of being better able to politely 'reel people back in' when they deviated too far and too loquaciously from my research interests.

The single focus group session mentioned above arose opportunistically after I had already conducted a dozen one-to-one interviews: one respondent suggested that her colleagues (all working in an international humanitarian organisation) might wish to join in a group conversation about their journeys. While not part of my original plan, I ran with the opportunity partly from an experimental point of view so as to be able to assess how the different interview types compare. The session, which brought together a group of five (men and women from around twenty years of age to sixty or so) generated a generally fruitful discussion around a number of aspects of the travel experience, particularly the work-related journeys taken during the day on public bikes. The main weakness of running the session was a pragmatic issue of some participants landing into the session late (due to a multiplicity of mundane reasons) so the discussions doubled back on themselves a little to enable others to catch up. Overall though, my experience of running this focus group supported Kitzinger's position that the "group processes can help people to explore and clarify their views in ways that would be less easily accessible in a one to one interview"

(1995: 299). The main downsides with planning to run such sessions relate to scheduling challenges.

When conducting interviews, I did not reveal my own views on transport matters to respondents, although my attire[115] worn on some days while loitering on the street and conducting interviews might have suggested to some that I was a cyclist and hence may have held particular views. Equally, some of my more detailed questioning might have suggested to some that I had first-hand experience of urban cycling. One potential significant effect of this is that *dublinbikers* might then have felt more at ease speaking about their cycling experiences, than had they assumed I was a non-cyclist. This effect, I suggest, appears to resonate with the concept of 'interviewer matching' effects as usually discussed in the context of minority ethnic groups (e.g. Papadopoulos and Lees, 2002: 261) as opposed to what we might call 'minority mobility groups'. On the other hand, I was conscious of the possibility of respondents giving socially desirable responses to my questions, i.e. responses that made themselves look good according to the current cultural norms (Mick, 1996). Since the cultural norm at that moment was, it seems, to view the *dublinbikes* scheme very positively - as strongly suggested in the *Your Dublin, Your Voice* survey (Dublin City Council, 2011c)[116], I also encouraged respondents to voice any negative experiences they had.

Each of the interviews lasted between ten and forty minutes, the average just over nineteen minutes (Appendix 4.8).

4.4.4 Interviewee profiles

Of the 40 persons interviewed, all but two (see 4.4.2 above) used the *dublinbikes*. Of these 38 *dublinbikers*, there were 24 male and 14 female: i.e. 63% male and 37% female. According to the official (very limited) statistics on *dublinbikes*, in mid 2012 67% of "[l]ong [t]erm subscribers" were male (J.C. Decaux and Dublin City Council, 2012) so my male/female split tallies closely with the official split gender for these subscribers[117].

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[115] My raincoat or pannier bag which I sometimes carry with me on field work – or, on other occasions, my own bicycle locked near where I was observing – might have suggested to some *dublinbikes* users that I was a cyclist myself. It is probably fair to say though that I fall into neither of the stereotypes that Aldred discusses on her blog in regard to "the pressure on cyclists, male and female, to look either like you're competing in an Olympic sport, or alternatively, to show it's possible to look super-stylish while riding" ALDRED, R. 2013a. *Cycling: What not to wear?* [Online]. Available: http://lcc.org.uk/articles/cycling-what-not-to-wear-1 [Accessed 03/Apr 2013].

[116] The Dublin City Council webpage providing the details of the results is no longer active, but a summary of the results is provided by the Dublin City Business Association. They state that "98% of respondents rated LUAS [tram] positively. 95% and 89% of respondents respectively rated dublinbikes and Dublin Port Tunnel positively" DUBLIN CITY BUSINESS ASSOCIATION. 2014. *Your Dublin, Your Voice* [Online]. Available: http://www.dcba.ie/your-dublin-your-voice/ [Accessed 13/Sept 2014].

[117] All but one of my *dublinbikes* using respondents were long-term (i.e. annual) subscribers to the scheme. The one respondent who was a 'casual' user indicated that he planned on becoming a long-term subscriber.

Table 4.1 above shows the numbers of respondents divided according to gender and approximate age. The ages are estimates as I did not consider it important to know *exact ages*. Additionally, I thought that asking interviewees their ages directly might not be welcomed by some and therefore might interfere with the ease of chatting comfortably with them. Nor did I ask respondents directly where they were from or what nationality they were but I noted if they indicated to me that they had migrated to Dublin from elsewhere (be that the west of Ireland, Poland or further afield). As discussed in Chapter 8, for future phases of research on public bikes focused on teasing out particular theories (related to the migration of practices for example), it might then be more relevant to be more explicit in asking for such information.

As regards the socio-economic make-up of interviewees, the vast majority of respondents could generally be classified as belonging to the middle and higher socio-economic groups (including students), a result broadly consistent with the findings of Murphy and Usher (2013). Interestingly, there seemed to be a disproportionately high number of people from, what one might call, the creative industries (film, marketing, design) and especially so from the "Set 2"interviewees[118].

A full list of interviewees and interview dates is provided in Appendix 4.8. The format for each name used in both that Appendix and throughout the thesis is as follows: *interview number, pseudonym, nationality (if not Irish), approximate age, occupation (if known)* - e.g. Int26, Tom, 40s, technician.

4.4.5 Interview data analysis

All of the main interviews (i.e. the 36 interviews: 35 one-to-one and 1 focus group[119]) were recorded and transcribed by myself. I used a thematic analysis to help with structuring my data and chose it on the grounds of its theoretical flexibility (Braun and Clarke, 2006). The detailed analytical work was supported by the *NVivo* software (Version 9) which I chose for pragmatic reasons: colleagues who had worked on qualitative data recommended it and training on *NVivo* was available through the university, so we ended up with a bank of *NVivo* expertise within the Department. Note that I used *NVivo* to assist with the analysis of my *Set 1* interviews only (with the exception of the focus group interview which was done manually). Of the *Set 2* interviews,

[118] I probed this question a little with one of my 'creative class' interviewees. She explained that in her field (film production), she is frequently seeking volunteers to help with various programmes so she felt something of a duty to return the favour to someone else in a position of seeking public input.

[119] In my transcribing of the focus group interview with five people, I was able to assign different names (pseudonyms) to each of the speakers quite easily. This was mainly because, firstly, the transcription was carried out immediately after the session while my memory was fresh and, secondly (and fortuitously), each of the five participants had distinctive voices related to their ages and also their strong Dublin and regional accents.

two persons were *non-dublinbikes* users and seven were *dublinbikes* users. These latter (i.e. Set 2) interviews were analysed manually and systematically after the NVivo coding work was conducted using *Set 1*.

My coding work and analysis followed three main phases. First of all, as and immediately after I transcribed my recordings I noted the areas of discussion with my respondents. While my question prompts (Appendix 4.7) informed my pre-set or "a priori codes" for data analysis, the new ideas which emerged from my initial listening to the interviews informed my inductive or "a posteriori codes". Secondly, I systematically coded my data using both the pre-set and inductive coding categories as my starting point but, as I worked my way through my data (line-by-line or paragraph-by-paragraph), I recast those coding categories in a number of distinct ways: by creating new coding categories; by merging existing ones; by sub-dividing others; by reconfiguring others further in the sense of narrowing or broadening or redefining their scope. By the end of this systematic sweep of the data and recasting of categories, I ended up with a total of 35 coding categories (Appendix 4.9). For the remainder of my coding work these coding categories were fixed (or 'frozen'). The third phase of my coding work was to systematically re-code all of my data using my new 'frozen' categories.

These final coding categories can also be thought of as themes, which Braun and Clarke simply define as "something important about the data in relation to the research question, and [which] represents some level of patterned response or meaning with the data set" (2006: 82). By the end of this three phase analysis, it became possible to begin to extract out my main arguments and hence I could begin the process of putting a structure on my empirical chapters. There was a strongly iterative dimension to this aspect of work since as the writing gathered pace, I began to see new links within and across my data which I then revisited before re-continuing with the writing, and so on.

A further phase of analytical work involved checking patterns within and across the coded data, such as whether or not particular experiences of *dublinbiking* were associated (in one way or another) with, for example, respondents also owning their own bikes or having cycled in the city beforehand, or being younger or older.

4.4.6 Unstructured observation (and random chats with long-lost acquaintances)

As mentioned earlier I also conducted some unstructured observation work as a further research method, with most taking place while loitering at docking stations seeking interviewees or while posting letters to potential respondents (see 4.4.2 above). Sometimes though, I casually observed behaviours of *dublinbikers* while 'off-duty' as a researcher including when I used a public bike

myself (see 4.4.1 above)[120] and while sitting in cafés which overlooked docking stations[121]. In these latter cases, the lines between formally researching and being 'off-duty' become blurred. In any case, all of my observational work was unstructured - unlike that of Russell et al. (2011) for example. My aim with this component of work was simply to note behaviours -particularly the interactions between users (or between users and non-uses) and, for example, to note interesting objects carried in bike baskets.

In regard to loitering at stations observing users, my clip-board may have marked me out as some type of researcher to some and this reminds me a little of Watts' ethnography experiences: "[a]s an ethnographer I was neither a passenger nor a member of the train crew, my labours, what I did, were different and marked me out. I was not immobile like an unpacked passenger, nor was I responsible for the mobility of the train; I was doing something else." (2008: 718). While aware of the possibility of observer effects (Kazdin, 1982) - that my presence might (subtly) shape the behaviours being observed - I do not think these are of great significance in this case as I stood unobtrusively around docking stations up until the moment that I approached people.

Additionally I spoke to *dublinbikers* who did not have the time to be interviewed formally subsequently, but who were able to provide some informal observations and reflections on their journeys. Finally, one quite unpredicted consequence of loitering on the street observing and distributing flyers was to bump into many people that I was acquainted with - a little and quite well, from recent times and from the distant past. These encounters generated further discussions on the system and facilitated additional theorising on mapping out the terrains of potential interest in the 'systems' parts of my investigations. It is to this sphere that I now turn.

4.5 Systems investigations: methods employed

4.5.1 Examining the system - the overlapping case study

I describe here the nature of my macro-explorations of the *dublinbikes* system. As discussed in my literature review chapter, my aim is to understand the processes associated with the embedding of the public bike system into, inter alia, the institutional, cultural and policy contexts in Dublin. The 'architecture' of my overarching research design then employs both micro- and macro-lenses

[120] Since Trinity College Dublin and the work place of my current part-time job (and also many of my places of socialising) all lie within the public bikes zone, it was hard not to observe casually and at least occasionally *dublinbikers* in the city.

[121] For example from the windows of the cafés overlooking the DB station (#21 as per the DB map in Appendix 4.3) on Leinster Street.

so as to develop a holistic understanding of what happens when a new form of urban mobility settles into place. Incidentally, while the triangulation of a mixture of methods is often used to examine the same dimension of a research problem (Jick, 1979: 602), in my case I used a mixture of data collection methods to examine two separate unknowns (i.e. the micro-sociological goings-on and the systems effects) of the phenomenon of public bicycles[122]. In essence, my overall research design is one of having two case studies, slightly overlapping – as shown in Figure 4.1 in this chapter's conclusions section. Within each case study, I employ a mixture of data collection methods. Those methods (both qualitative and quantitative) used for the 'systems' case study are described in Sections 4.5.3 to 4.5.8 below. The logic in using predominantly qualitative methods to explore the processes around the embedment of the PBSS into the city rests on their ability to include many different kinds of data collection and analysis techniques – the data can include images, text, sound etc. (Nkwi et al., 2001).

On the use of the case study, Yin maintains that the research design is well suited to elucidating the nature of complex processes (2009: 13-14). Furthermore, in investigating complex processes and transitions, Geels has made extensive use of the case study design as discussed earlier as, of course, has Hughes (1983). Within this latter scholar's case study of the processes of technology transfer, he incorporates a comparative dimension through taking a close look at how the Edison electric system transferred to Berlin on the one hand, and London on the other.

4.5.2 Iterative processes and applying the Multi-level Perspective

My literature review generated a mass of questions on the dynamics of entwining a public bike system with the city. Additionally, over the course of my ethnographic work, further questions bubbled up to the surface on possible 'systems' processes at play. In this section 4.5, I describe the empirical methods I employed to shed light on such putative processes. As will become clear below, the steps of commencing quests, generating (partial) answers and new questions, and then seeking out new methods to follow up on these were iterative. There was, I felt, a strong sense of dealing with hydra-headed questions on the processes at play.

My overarching plan was to set out to explore (loosely) the main domains within the MLP's 'socio-technical regime' as identified by Geels in his transitions work in the transport studies field. That is, markets, user preferences (broadly dealt with through my ethnographic work), industry, policy, technology, culture, science (2012: 474) – and to consider also what was happening at the 'macro-' or 'landscape level'. I use the term 'loosely' in parentheses since in Geels' studies and especially his earlier ones (2002), there is very much a focus on the development of the technology itself, as

[122] Of course I used a mixture of methods to examine each of these strands too, as described in this chapter.

well as the other domains. However, in my case study of Dublin, the technology itself is somewhat mature when it arrives - and essentially remains in that same state at least over the quite short time scale I focusing on (essentially 2009 to date), so it is the other domains that are my prime focus.

Finally here, the difficulty and even 'messiness' of applying the MLP has been commented on by a number of scholars such as Genus and Coles (2008). I acknowledge criticisms of the framework and note also that difficulties remain in defining the boundaries of what is relevant for the scrutiny of the researcher. I reflect on these points in Section 8.4 of the Conclusions chapter.

In the meantime, I discuss the rationale underpinning my choice of (suite of) methods and analyses and I explain how each was conducted.

4.5.3 Key informants

As discussed earlier, the MLP stresses the importance of the role of the interactions of various actors in socio-technical systems change (Geels, 2002). Therefore one plank of my suite of methods employed to understand the socio-technological changes was to interview some key figures or actors linked to the creation, implementation and operation of the *dublinbikes* system.

One such actor was Dublin City Council, the local authority for Dublin City (Dublin City Council, 2014a). I chose to interview two key figures from within the Council: firstly, City Councillor[123] Andrew Montague (KI#4)– former Lord Mayor of Dublin, long-time Chair of the Transportation Strategic Policy Committee (The Labour Party, 2014) and the public figure most closely associated with the public bikes (as discussed in Chapter 2); and secondly, Jason Frehill (KI#2), a planner working in the Council and the official with direct responsibility for coordinating the implementation of the scheme. A further key actor involved in the creation of the scheme (again, as discussed earlier) was J.C. Decaux, so I sought to interview the CEO / Senior Manager of the company in Ireland. Unfortunately, my efforts at procuring this interview were unsuccessful because, I was advised (by Jason Frehill (KI#2)), negotiations between the company and the Council on the expansion of the scheme were at a particularly sensitive stage and therefore senior managers were not in a position to be interviewed at that (protracted) juncture[124]. To gain a different angle on the work of the outdoor advertising company in running the scheme – and drawing direct inspiration from Tironi's ethnographies of the 'invisible work' carried out by J.C. Decaux's '*Vélib'* bike mechanics in Paris (Tironi, 2011a, Tironi, 2011c, Tironi, 2013) – I interviewed

[123] I use the abbreviation Cllr. in other parts of the thesis.

[124] As also covered in this newspaper article: GINTY, C. 2013a. Dublin bikes expansion scheme to be delayed. *Irish Times*, 2013 Jan 21.

one of the bicycle mechanic-cum-truck drivers working for them. The purpose of this interview was to tap into on-the ground insights into the operations of the system. I kept and keep the identity of this interviewee (KI#1) confidential. My final 'key informant' was Will Andrews (KI#3), Chairperson of Dublin Cycling Campaign during the period that the *dublinbikes* scheme was being planned and implemented. This organisation (with whom I have a long and close involvement myself) is an "independent, voluntary group lobbying local and national government to bring about improved conditions for cyclists and greater recognition of the benefits of cycling" since 1993 (Dublin Cycling Campaign, 2014d). My particular interest here was to understand the advocates' perspectives on how public bikes sat within the wider (emerging) cycling policy context (Cf. Aldred, 2012b: on the 'outsourcing of cycling' to private, quasi-private, and voluntary organisations).

I considered interviewing further senior figures[125] from the transport sector, but decided against it: partly on the grounds of the shrinking time I had available but also, as Wickham highlighted, because of the "institutional deficits" (2006a: 203) in the city. That is, there has been no devolution of power to the City which means that 'almost everyone' – and yet no-one person – is responsible for transport in the city. This makes the job of researcher more difficult.

In Appendix 4.10 below, I list the dates (and, where applicable, durations) of the interviews with key informants. Three were held in diverse physical settings (an office, a café and a hotel bar) while another was conducted by email since Mr. Andrews had by then moved to New Zealand. I used narrative interviews to probe the three key informants' understandings of the history and processes that (they perceived) were associated with the conception, development and operation of the scheme. Some common questions to all of my key informants were, firstly, what was their role in the development of the systems and, secondly, what are the on-going issues and challenges that they perceive. The remainder of questions emerged as the unstructured interviews progressed.

Each of the key informants was aware of my background in cycling advocacy and transport policy (as discussed above). In terms of shaping the knowledge produced, this awareness of my own background might have made key informants more forthcoming with their information but not in

[125] Another figure I considered seeking to interview was the former Dublin City Manager, John Fitzgerald. I noted (in Chapter 2, section 2.3.2) that he did not "believe that a free bike scheme would work" in Dublin (as per the article by MCDONALD, F. 1996. Greens hope for a new cycle in city transport. Ibid., Wed 06 Nov 1996.). Therefore it would have been interesting to tease out with him why he thought this and how he now understood the success of the scheme. In the end, time did not permit.

any significant way; furthermore they might also have been more inclined to stress the positive cycling interventions that they promoted.

Two out of the three face-to-face interviews were recorded and transcribed; the interview with the employee of J.C. Decaux was not recorded (as per the wishes of the employee) but I subsequently noted the main points discussed. The recordings of the interviews were transcribed and all were subsequently analysed, the approach being to systematically capture the main themes and arguments that emerged. As mentioned above, some points raised by interviewees prompted new questions which demanded further investigation. Equally, I decided to check other points raised by some interviewees against various published sources (e.g. statutory documents and newspaper articles and other documents, where possible) given that each interviewee might have his / her own agenda in conveying a particular interpretation of events and his / her role in them[126].

4.5.4 Secondary quantitative data and analyses

I sourced and reviewed a number of census, transport and traffic datasets as listed (and briefly discussed) below. On the one hand, the purpose was to provide a detailed picture of the Irish and Dublin cycling context in the first and second decades of the new millennium; on the other hand, the aim was to seek to ascertain if there was a correlation between the arrival of the *dublinbikes*, and changes in cycling numbers more generally in the city.

- *Census 2006 – Travel to Work, School and College (Volume 12)* (Central Statistics Office, 2007). I also used existing analyses of Census 2006 data: e.g. Lawson et al. (2013a)
- *Census 2011 Profile 10 Door to Door – Commuting in Ireland: Statistical Tables and Appendices* (Central Statistics Office, 2012a).
- *Dublin City Council's Canal Cordon Counts*: (Dublin City Council, 2010a, Dublin City Council, 2013c, Dublin City Council, 2014c)
- *Report on trends in mode share of people crossing the Canal Cordon* (National Transport Authority, 2013c). This dataset integrates data not only from Dublin City Council's (manual) annual traffic counts but also (inter alia) data from Irish Rail, the Railway Procurement Agency and Dublin Bus on occupancies (during the morning peak-hours) of trains, trams and Dublin Buses respectively.

[126] For example, the interview with the politician took place around six months before the 2014 local elections, so one would expect the politician to be getting into 'election mode' and therefore strongly promoting his role in the development of particularly well-received schemes.

- *Dublin City Centre Cycle Count - May 2013. Report to Dublin City Council Cycle Forum.* (Dublin City Council, 2013b)

Crucially, there was one important dataset which was not available for public (or researcher) perusal and that was the (J.C. Decaux) data detailing the movements of *dublinbikes* and providing (anonymised) data on user profiles. As my key informant working in the Council put it, while talking about the very limited data available on the 'stats' part of the *dublinbikes* website[127], "[n]ow as it stands, that's all the information that is publicly available" (KI#2)[128]. In effect, the only quantitative data available was that gathered in survey work by other academics (Murphy, 2010, Murphy and Usher, 2013)[129]. The non-availability of this data (for 'commercial reasons') means that we do not know, for example, how many of the (now) 42,000 annual subscribers (J.C. Decaux and Dublin City Council, 2014a) live within Dublin city, the Greater Dublin Area (GDA) or further afield. Such data would enable researchers to build up a more complete picture as to, for example, how far the influence of the new socio-technical system in the capital might extend.

4.5.5 Government (national and local level) documents

I examined the following statutory plans, policy documents, and engineering and urban design manuals:

- *Dublin City Development Plan 2011 – 2017 - Written Statement* (Dublin City Council, 2011a)
- *George's Quay Local Area Plan 2012* (Dublin City Council, 2012)
- *North Lotts & Grand Canal Dock Composite SDZ* (Dublin City Council, 2013d)
- *Dublin City Council Cycle Action Plan 2007-2012* (Dublin City Council, 2007)
- *Dublin City Council Cycling Action Plan 2010 – 2015* (Dublin City Council, 2010c)
- *Programme for Government - Government for National Recovery 2011 – 2016* (Department of the Taoiseach, 2011)
- A Platform for Change (Final Report) An integrated transportation strategy for the Greater Dublin Area 2000 to 2016 (Dublin Transportation Office, 2001)

[127] E.g. J.C. DECAUX & DUBLIN CITY COUNCIL. 2013a. *dublinbikes – the stats! (18/01/2013)* [Online]. Available: http://www.dublinbikes.ie/Magazine/Reports/dublinbikes-the-stats! [Accessed 11/Mar 2013].

[128] Incidentally, this issue of public bike data not being made available is one that has long generated anger in the digital rights sphere – see for example TJ. 25/Sept 2009 2009. JC Decaux should backpedal on iPhone app threat. *Digital Rights Ireland* [Online]. Available from: http://www.digitalrights.ie/jc-decaux-should-backpedal/ [Accessed 09/Sept 2014].

[129] Note that more recently, improved data feeds (that are used on 'apps' to signify the availability of bikes at particular stations) have enabled O'Brien to present 'live' visualisations of the extent to which each of the (now 100+) *dublinbikes* stations are full or empty. See O'BRIEN, O. 2014. *Bike Share Map - Ireland: Dublin* [Online]. Available: http://bikes.oobrien.com/dublinalt/timeline/ [Accessed 21/July 2014].

- *National Cycle Policy Framework* (Department of Transport, 2009b)
- *National Cycle Manual* (National Transport Authority, 2011b)
- *Design Manual for Urban Roads and Streets* (Department of Transport and Department of Environment, 2013)

This examination entailed assessing, where possible, if and how the *dublinbikes* scheme shaped the documents' contents, explicitly or otherwise. See full discussion in Chapter 7.

Further, I examined additional government documents, reports commissioned by government and (regarding the final two bullets below) online-journey planning tools, in regard to the further expansion and diffusion of public bikes, and the integration of the system with other systems:

- *dublinbikes Strategic Planning Framework 2011-2016* (Dublin City Council, 2011b)
- *Proposals for Introducing Public Bike Schemes in Regional Cities – Technical Feasibility Study. Client: National Transport Authority* (Jacobs Engineering Ireland Ltd., 2011)
- *Public Bike Scheme in Regional Cities* (KPMG, 2011)
- *Invitation for Expressions of Interest for the Provision of Sponsorship to Public Bike Schemes in the Regional Cities* (National Transport Authority, 2012)
- *Journey Planner* (National Transport Authority, 2013b)
- *Dublin Cycle Planner* (National Transport Authority, 2014c)

Further still, I examined the following documentation, most of which was issued as supporting material to the published agendas of meetings of Dublin City Council's Strategic Policy Committee (SPC)[130] on Transportation:

- *Proposals for New Speed Limit Bye Laws (March 2009)* (O'Dea, 2009)
- *Dublin City Council Special Speed Limit Bye-Laws 2009 - A report To the Chairperson and Members of the Transportation and Traffic Strategic Policy Committee (12/Feb 2010)* (O'Sullivan, 2010)
- *Report to Chairperson and Members of the Transport and Traffic Strategic Policy Committee - 20's Plenty for Us (November 2013)* (Gormley, 2013)
- *Tender Issue (Revised) - Grand Canal and S2S Docklands Premium Cycle Route Design Review* (Dublin City Council, 2010d)

[130] These local government structures were introduced in the late 1990's with the aim of "enhanc[ing] local democracy by ensuring that local communities and their representatives ha[d] a say in the provision of local services, and [by] strengthening the role of elected members". Page 7 of: INSTITUTE OF PUBLIC ADMINISTRATION 2004. Review of the Operation of Strategic Policy Committees. Dublin, Ireland.

- *Facilitating the rapid growth of cycling in Dublin (AECOM's Island of Ireland Newsletter)* (AECOM, 2012)

For some items, I had access to the documentation directly (e.g. via SPC members); for others I sought copies from Stephen Hickey[131] in the Traffic Department of Dublin City Council.

Relatedly and finally, I perused the websites of other Councils so as to compare dates and discussions around the introduction of speed limits bye-laws:

- *Cork City Road Traffic (Special Speed Limits) Bye-Laws 2011* (Cork City Council, 2011)
- *Road Traffic Special Speed Limit Bye-Laws 2012* (Kilkenny County Council, 2012)

4.5.6 Advocacy resources and politicians' websites

The following websites, blogs and social media sites[132] were also examined:

- *Dublin Cycling Campaign* website (Dublin Cycling Campaign, 2014c)
- *IrishCycle.com* (Ginty, 2014c)
- The *Facebook* pages of the following 'pop-up' online advocacy groups campaigning specifically for new public bike schemes in other Irish cities:
    - Galwaybikes.ie (2011)
    - Limerickbikes.ie (2011)
    - Corkbikes.ie (2011)
    - Waterfordbikes.ie (2011)
- The website of a Fine Gael T.D: Eoghan Murphy (Murphy, 2013b, Murphy, 2013c)
- The website of Sinn Féin (Sinn Féin, 2010)

The last two bullets here point to the websites of two of the main political parties – one in government and one in opposition. The purpose of this (cursory) search of political parties' websites was to develop an initial sense of how far the concept has permeated political discourse and press releases. See Chapter 7 for full discussion.

[131] He works on matters related to the operation of the Transportation SPC meetings.

[132] Note that (i) this list may not be completely exhaustive; and (ii) many of these websites were visited on numerous occasions, while the 'access date' (noted alongside the URL in the reference list at the end of the thesis) simply shows one date.

4.5.7 Cultural dimensions: websites of institutions and property agents, media

In order to generate further ideas about the processes by which public bikes might shape the wider culture, I chose to examine several further (sub-)domains. First of all and in regard to the domain of the advertising of properties, I carried out initial checks of the website of the DAFT property agency (Daft.ie, 2015) to assess if public bikes were beginning to shape the content of their advertisements. This was not a full systematic search and one in which direct comparison was made with references to buses and trams etc. – that was beyond the scope of the study. It was an initial probing of the web content. Secondly, I examined the websites of the city's cultural institutions to assess the extent to which public bikes were referred to in online directions to the institutions. The details are provided in Chapter 7 and supporting appendices. Thirdly, I examined the websites of the city's third level institutions, again to assess the extent to which public bikes appeared in online directions to the institution. The details are provided in Chapter 7 and supporting appendices.

On reflecting on the choice of institutions examined, I acknowledge the weakness that at least two of the above realms – the cultural institutions and third level colleges particularly – are strongly associated with the higher socio-economic groups. As discussed in the conclusions chapter, a future deeper study of the wider cultural influence of the bikes ought to include an examination of facilities more associated with the lower socio-economic groups and the (strongly) disadvantaged.

4.5.8 Further data collection (including unstructured collection) and analyses

Throughout the research, I referred regularly to media reports and commentary on the planning, operation and expansion of the *dublinbikes* scheme, drawing in particular from the Irish Times electronic archive (ProQuest LLC, 2014a) and the postings of journalist Cian Ginty on his *Cycling in Dublin* blog (e.g. Ginty, 2012a) and his *Irish Cycle* blog[133] (e.g. Ginty, 2013d). I sourced further news reports, such as those from the Irish Independent (e.g. Brennan, 2013), from frequent *Google* and *Google Scholar* searches – and, more recently, through *Google Alerts*[134] by using the search terms 'bike share' and 'public bikes'. The alerts yielded local news stories - e.g. Hose (2014) on San Diego's (expensive to join) new scheme - on an international basis (but weighted towards US sourced content, it would seem, from the array of stories I was alerted about).

Finally, it is worth noting that some further data that fed into my theory building around processes potentially associated with the arrival of public bikes in Dublin came to my attention in

[133] Which superseded the former blog.
[134] GOOGLE. 2014. *Alerts* [Online]. Available: https://www.google.com/alerts [Accessed 10/July 2014].

quite unstructured ways. For example, I heard through word-of-mouth that the *Arena* arts show on RTE radio (RTE, 2013) devoted time to discussing the use of public bikes in exploring Dublin city on *Culture Night* (see Chapter 7) and, by chance, I stumbled across a number of online advertisements for other products which make use of *dublinbikes* (as detailed in Chapter 7).

4.6 Chapter conclusions

4.6.1 Two case-studies, slightly overlapping

My overarching research design can be thought of as two separate case studies – one on journey experiences, the other on systems – which overlap a little, as shown in Figure 4.1 below. Within each of the case studies, I used a mixture of methods. The design can be described as a parallel mixed design (Teddlie and Tashakkori, 2009).

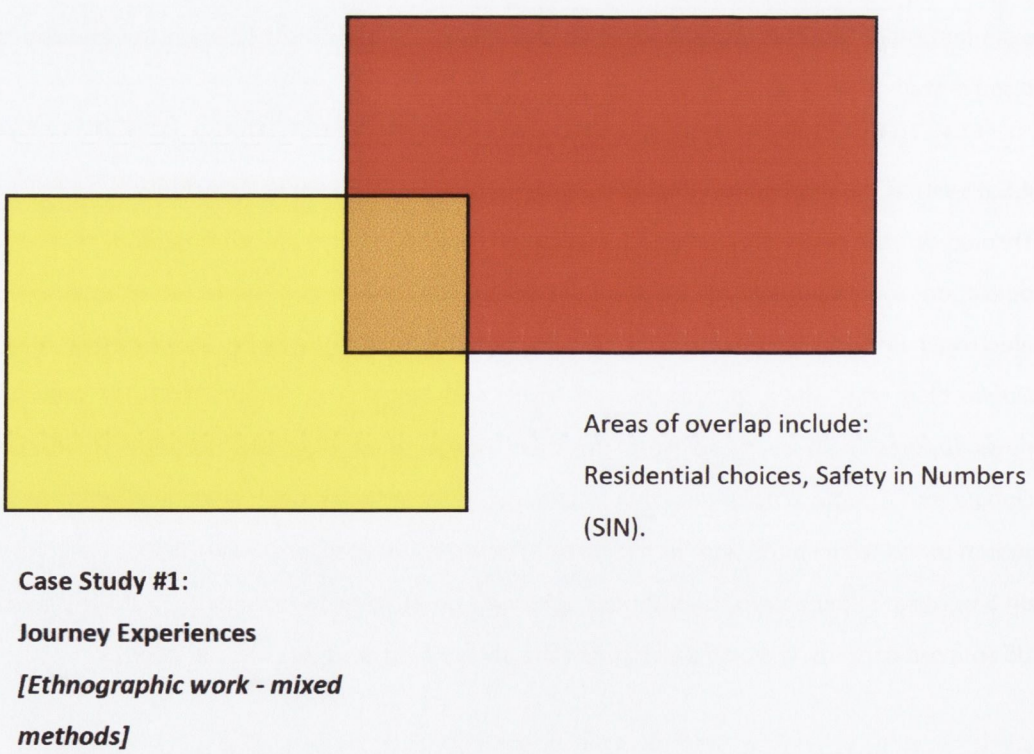

Figure 4.1 - 'Two-case studies combined' research design

Note that of the three empirical chapters that follow, the first two cover journey experiences and the findings are drawn from my ethnographic work described in section 4.4 above. The third empirical chapter deals with the socio-technical system and is drawn mainly from my work described in 4.5 above – that is, interviews with key informants, review of data and policy documents and other sources. Note though that this third empirical chapter is also informed by the practices and habits of the public bike users which are elucidated mainly through my interviews with respondents.

4.6.2 Confidentiality and ethics

I adhered to Ethical Policy of TCD's School of Social Sciences and Philosophy (2010) in planning and executing my research. All respondents were aware that interviews were recorded, as explained in the letters distributed (Appendices 4.4 – 4.6) and at the start of each interview. I treated all data with care and strict confidentiality, anonymising all personal data as soon as was practicable. No special ethical challenges arose over the course of the work.

Chapter 5 – Journey Experiences: New Freedoms

5.1 Introduction

In this chapter, the first of three reporting on and discussing my empirical findings, I explore the senses of freedom that my *dublinbikes* interviewees experienced. These findings are drawn mainly from my field work of interviewing respondents and, to a lesser extent, from my observations of *dublinbikers* around docking stations.

I begin (in section 5.2) with a discussion on the speedy and easy nature of public biking in Dublin before examining (in section 5.3) how financial considerations feed into the use and, as we will see, the non-use of this form of urban mobility. I continue the discussions on freedom (in section 5.4) by going beyond simpler ideas of 'trip substitution' as I bring to the surface the new adventures and trip patterns that have emerged in response to the arrival of the *dublinbikes*. Furthermore, in this section, I begin to raise questions on the new habits and behaviours which seem to be adopted by at least some *dublinbikers* and I discuss how these new behaviours may be generating ripples that reverberate in realms beyond the minds and bodies of *dublinbikers*. This section links directly then to Chapter 7 on systems effects. Overall, there is a blurring between the realms covered in the main sections (5.2, 5.3 and 5.4) but the order in which I present them reflects a broad transition from the more traditional concerns of transport planners to newer spheres of mobilities research.

In the final chapter section (5.5), I summarise what appears to be distinctive about public biking in terms of the types of freedoms users associate with it while drawing comparisons with other types of mobility freedoms.

5.2 A speedy and easy experience

I argue here that journeying on *dublinbikes* - as viewed by my interviewees - is a distinctively easy and free experience and, further, these experiences resonate strongly with historic descriptions of the freedom associated with early motoring (and indeed early cycling) as discussed in Chapter 3.

5.2.1 Speed and convenience

The most striking reported characteristics of *dublinbikes* journeys are the speediness and convenience of moving about. The vast majority of respondents mentioned speed, guaranteed journey time and convenience (or ease or handiness) when reporting upon their experiences of movement on the *dublinbikes*. In fact when asked what the *dublinbikes* meant to them, respondents' most common answers were "convenience" or "flexibility" or "time saving purposes", or, as this man put it:

> The first word that comes to mind is clean - clean, healthy, cheap, flexible and freedom as well. Freedom of choice, freedom of movement, freedom of experience – the ability to move quickly, to react quickly to your environment (Int24, Frank, 40s, business man (and former architect))

This priority given to speed resonates directly with the value accorded to it by early traffic engineers (as they subsequently become known): Blomkvist, for example, reports that the first traffic signals and then 'greenwaves' to allow for a "speed of 30km/h" for motorised traffic[135] were introduced to Salt Lake City one hundred years ago (2004: 285)[136]. In the following sections I unpack the notions of speed, convenience and freedom associated with the DBs, comparing them to experiences of DB users with other modes. In fact the concepts of freedom and spontaneity are threads running through much of this chapter and some of Chapter 6.

Speed

The speed of movement and saving of time were mentioned most frequently in comparison to walking, the mode which has been replaced most by *dublinbikes*: Murphy (2010) reports that 41% of *dublinbikes* journeys were previously taken on foot[137]. The following quotes typify respondents' experiences:

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[135] Incidentally, the first 'greenwaves' for cyclists in Denmark (and probably the world) were introduced in 2007 by the City of Copenhagen: COPENHAGENIZE.COM. 2014. *The Green Waves of Copenhagen* [Online]. Available: http://www.copenhagenize.com/2014/08/the-green-waves-of-copenhagen.html [Accessed 29/Sept 2014].

[136] Blomkvist draws on the work of Maxwell here: LAY, M. G. 1992. *Ways of the World. A History of the World's Roads and of the Vehicles That Used Them,* New Brunswick, NJ Rutgers University Press.

[137] To clarify the statistics here, Hilary Murphy (in her unpublished thesis: MURPHY, H. 2010. Dublin bikes: An investigation in the context of multimodal transport. Dublin Institute of Technology.) found that 41% of all *dublinbikes* journeys were previously taken on foot; while other scholars (Enda Murphy and Joe Usher), with a question phrased slightly differently, found that "45.6% of [their *dublinbikes*-using] respondents use the scheme as a substitute for walking" (MURPHY, E. & USHER, J. 2013. The Role of Bicycle-Sharing in the City: Analysis of the Irish Experience. *International Journal of Sustainable Transportation*, null-null.)

> I feel more efficient because I save time – when walking it takes me about 20 minutes; with the bike, I'm at home in 5 minutes. (Int09, Jurgen, German, 20s, PG student)

> [F]or a long time I walked but when the bikes came in, it's hard to go back. When you get used to going somewhere in 15 minutes, it's a pain in the arse when it takes half an hour. (Int14, Alan, 20s, PG student)

> Well for me it is that it gets me from A to B faster than any other way to work... So I love the system. I don't necessarily love cycling or bikes that much, but I love the system that is available to people. (Int17, Joan, 30s, academic biochemist)

> I like that the journeys are shorter and faster on the bike so that's the reason I am using it. Sometimes when I am going shopping on Parnell Street, mostly in Lidl and so on, there is another station on Parnell Street – I'm in five minutes there – so it's really fast. (Int13, Miklos, Czech Republic, 30s, IT contractor)

> [It is] [s]low and kind-of tiring if you are walking a considerable distance around the city and, in relation to taxi, it would be [the] cost of the taxi and lack of flexibility or inflexibility because the cars are governed by the one way traffic system – so getting from A to B can involve going to C to D to Z to get back to B – which is a cost factor. (Int24, Frank, 40s, business man (and former architect))

So, moving faster and saving time and saving bodily energy are the concerns of these urban movers. According to some, the *dublinbikes* also feel quicker than the tram:

> By the time they take their stops and I would have my bike parked... It definitely is quicker. (Int01, Ger, 20s, student)

> [On this particular day...]I had forgotten my phone and that was the quickest way to get home... I was going to get the *Luas* but I'd have to walk to the *Luas* stop... So I... get the [public] bike in Temple Bar to my home and run in and get my phone in Ranelagh and tear back - so it took me about half an hour... (Int23, Lulia, 20s, graphic designer)

Convenience and inconvenience

Respondents' tales of the ease, convenience and flexibility of public biking abounded:

> For instance the other night I had to go to friends of mine... they run a cinema night in a pub in Phibsborough, so I just jumped – I worked late – I jumped on a bike outside the office and cycled up to Eccles Street and just walked [the remainder of the journey] up to Phibsborough... it took no time whatsoever (Int02, Terry, 40s, IT contractor)

> I do lots of meetings around the city, so it's handy and just for health-wise as well rather than getting out and taking a taxi. Well I've no parking here so it is either a taxi or cycle, so I always try to cycle whenever I can... (Int19, Dermot, 50s, employers' association rep)

> I have found it a very easy way to get around the city centre quickly. It removes any need for a car, buses and I live in the city centre so it is very very convenient for me. (Int25, Neil, Scottish, 40s, professional)

It is especially in contrast with the bus – particularly for cross-city[138] journeys– that the *dublinbikes* are much handier for users:

> Bus, I would use [it] to get into town but I would never traverse the city with the bus. I know they have the city centre fare and that. I know my sister uses it from Harolds Cross direction to go up to Parnell Street... but for that sort of thing I would definitely use the bike. [For any trips]... that you are going Northside [to] Southside, or East [to] West, any jump of a distance. (Int21, Maurice, 30s, software programmer)

> [I prefer the public bikes and]... that's partly because of the advantage of getting where you want, partly the pleasure of doing it and partly because we've got such a crappy public transport system (Int03, Richard, 50s, statistician)

In other words, it is the simplicity and uncomplicatedness which is alluring for many users:

> I was able to go straight to the docking station, take a bike, didn't have to adjust anything – the seats or the handlebars and cycled straight down to the Science Gallery – there was a docking space. It was very very straight-forward, very easy. (Int24, Frank, 40s, business man (& former architect))

For many this theme was expressed even more explicitly in terms of freedom and autonomy:

[138] In other words, crossing from the southside to the northside or vice versa. There are (or were until very recently) relatively few bus services which are cross-city. Many services terminate near the Liffey quays.

> Whereas with the bikes, I can leave any time in the morning – and it's just the freedom. And I love just being able to get on the bike and cycle. (Int27, Joanne, 30s, college administrator)

> It takes about an hour and half to drive in. So it was perfect. I could get the DART [suburban train] in and then I could cycle within the canals if you like or even a bit further. It just opened up everything for me really. (Int22, Paul, 40s, engineer)

There is a paradox here of course, in that while users describe the experience as being one of self-reliance and simplicity, underpinning this seemingly self-sufficient choice is the complex architecture of the socio-technical system of the public bikes: the electricity and broadband networks, the bicycle redistribution system and the highly financialised model used to monitor bike use and charge to users' credit card accounts (as discussed in Chapter 2).

Significantly however, the 'easy' nature of users' movements suffers disruptions upon arriving at full docking stations (when on a bike) or at empty stations (when seeking a bike). Every one of my respondents raised this issue, typified by the following:

> the odd time I come to Merrion Square they are full although that is not as big a deal. Because there is a rack [i.e. docking station] here and another one on Merrion Square so I can find somewhere to put them, but obviously if Charlemont or Harcourt Terrace are empty then I am a bit fecked, I'm late for work. So that is my biggest worry when I get off [the tram] at Charlemont... The way home is fine – there are always bikes at Merrion Square and there is always room to put them in Charlemont... And going home is nearly more important for me. I have two kids in crèche so *I have to get home* in time so I can't be affording to cycle around looking to park the bike. (Int17, Joan, 30s, academic biochemist)

This experience is a common one for public bike systems globally (Shaheen et al., 2012a), hence the focus of researchers on developing models to help optimise the siting of docking stations and the redistribution of bikes (see for example Sayarshad et al., 2012, Contardo et al., 2012) and the offering of incentives (in terms of 'bonus minutes') by operators for those who return bikes to "higher-up areas" of the city (Mairie de Paris, 2014a).

Figure 5.1 – Users of dublinbikes waiting to return bikes to a full station (Herbert Place, Dublin 2, 09:00 on 27 Nov 2013). Note van (with double decker platform) used to redistribute bikes. [139].

A further – but in this case deliberate - punctuation of public bike movements arises from the non-availability of bikes between 00:30 and 05:00 (J.C. Decaux and Dublin City Council, 2014c)[140]. As Boland put it, "Cinderella-like, the bikes need to be back in their stations soon after midnight" (2009) and this contrasts with other schemes such as *Vélib'* in Paris that are available 24 hours a day (Mairie de Paris, 2014c). Interestingly though, none of my respondents raised the issue of the non-availability of bikes during this period, although one user pointed out that

> At night time they move all of the bikes to the peripheral areas for commuters. If I'm in town at night time, I'll be very reluctant to take one of the bikes out or to cycle home cos I'd find it hard to get a parking spot [i.e. a free docking slot]. But that's not a complaint, that's just the way they are used (Int36, Joe, 50s).

Overall, what is suggested here is that the bikes appear to be generally accepted as part of a 'normal' public transport system that closes down in the early hours. On the other hand, employees in the services sector who work in late night bars and clubs might offer another opinion, so future research on the scheme could target such groups[141]. To put this in a wider

[139] Photo taken by Keith Byrne (Chairperson, Dublin Cycling Campaign) with permission to use it provided by email on 16/Sept 2014.

[140] To be clear here, the bikes cannot be removed from their stations during this time period but can be returned.

[141] On the 5th birthday of *dublinbikes* (September 2014), a number of news articles appeared marking the occasion (presumably prompted by press releases issued by the scheme operators). In one such article, Michele, a Brazilian au-pair working in Dublin's Docklands who was interviewed by the journalist, indicated that "[h]er one gripe with bike scheme is its midnight closing-time, because she's often found herself stranded in the city centre after dark. 'I wish it went much later,' she says." MCNEILL, E. 2014. A day in the life of a Dublin bike. *Irish Independent*, 20/Sept 2014.

context though, and as Urry puts it, "all forms of mobility are punctuated by pauses – pauses to refuel, repair, park overnight, clean the machine and/or its 'driver'" (2006: 21) - so the *dublinbikes* do not have a monopoly on such disruptions.

For many it was the *predicted perceived handiness* of the bikes which persuaded them to become *dublinbikers* in the first place, but what are also interesting are the micro-thinking processes leading, firstly, to decide to subscribe for a *dublinbikes* card and, secondly, to try out the system having received the card:

> A lot of one of my friend's little brothers and her boyfriend uses them all over town – they are both in college in the city... that's kind-of where I kind-of heard about them using them and saying how great they were...I suppose I've been watching them for a while – but because I'd never cycled in a city or anything before I was a bit nervous of them. But I bought a card probably a couple of months before I ever used it and, then one day I was on my way to work, and I was really late – and I started using them then, so I suppose once I did it once I was more comfortable using them then, so ever since then I've used them quite often, probably two or three times a week – mostly during the working day if I needed to go somewhere else in the city... (Int05, Selina, 20s, marketing person)

5.2.2 Freedom afforded by the physical design of the *dublinbikes*

Many of my respondents stressed how the design elements of the public bicycles themselves – as differentiated from those of privately owned bicycles - shaped their journeys in terms of the versions of freedom experienced. I discuss these below under several sub-headings, while in the next chapter (section 6.1) I describe how the technical design of the machines shaped embodied experiences of movement.

Baskets

Crucially - and somewhat surprisingly – the mundane technological artefact of the large and robust bicycle basket was highlighted by many as profoundly practical and appealing. It also added a distinct dimension of freedom to the urban biking experience, as described by Selina here:

> Yeah, I'd use it a lot. I always have my handbag in it... Yeah the basket - well for girls anyway - I'd say essential! The boys probably don't use it so much (Int05, Selina, 20s, marketing person)

The boys do, in fact, seem to use the baskets just as much. The empirical evidence suggests no difference in practice as the gender stereotyping of the woman above suggests. The provision of large baskets enables awkward items to be carried over distances which on foot would be unfeasible or, at the very least, uncomfortable[142]. The following two interviewees - first a middle aged woman and then a middle-aged man, both middle class professionals - give colourful examples of the practice:

> Oh, [I] always [use it]. Yes. And the fact that the basket is on the front [is helpful]. And I also find the wire that comes up and over very good. Cos I used to bring a bag which I'd put on the bicycle and then... I'd get around twenty newspapers from the Metro and they would pile up. And I couldn't have done it without the basket...I used to get the free newspapers for the [school] kids there. (Int15, Audrey, 50s, librarian)

> And the... large basket which is fairly solid means that it can take fairly solid, quite substantially heavy weights. Another example, I was in the Jervis centre taking a 24 pack of beer ... up to Christchurch. I could never manage that say if I had borrowed my wife's bike because even if she has a back rack, the whole effort of doing it and the instability of it. That heavy weight... I just put it in the massive big chunky bike rack [basket] of the *dublinbike*. No problem. I don't have to think about securing it then. (Int25, Neil, Scottish, 40s, professional)

His vivid description is very reminiscent of an American beer advertisement featuring a party-hopping 'dude' free-wheeling down a hill on his laid-back cruiser bike and then, effortlessly, swinging by a 'liquor store', filling his large basket with a crate of beer and then landing at the same party further down the hill (Planchon, Date unknown) – see Figure 5.2. The large chunky *dublinbikes* baskets enable users to do something which they could not otherwise do on foot or even on an ordinary bicycle. Furthermore, the artefact design is shaping not only journey experiences but journey possibilities, a theme developed further later in this chapter.

The following user, a female in her 30s, is somewhat self-conscious of looking like "an aul one", but the practical advantages conferred by the basket outweigh any perceived damage to her image as a young (fashionable) woman:

[142] See also Figure 6.1 in Section 6.2.3 ('Smells and tastes – eating and drinking en route').

Figure 5.2 – Cruising for beer – Miller commercial (Planchon, Date unknown)

> But the baskets are great. Because I'm like an aul one – I just put my shopping in and my handbag and I'm off...Do you know, if I was getting a bike I'd get a basket now cos they are handy to have. Maybe guys wouldn't use them as much but I would!... I don't care what I look like. (Int27, Joanne, 30s, college administrator)

It would appear though that some *dublinbikers* do not countenance the idea of fixing baskets to their own privately owned bicycles because of, as one male respondent put it, the "slagging value in them" (Int20, Danny, 30s, public servant). So while it seems socially acceptable to have a clunky basket on a public bike, it would not be so to have them on ordinary bicycles, at least for some. In a sense then, a public bike is not a normal bike.

> your own bike mightn't have a basket, but these, they just seem to be part of it and acceptable (Int01, Ger, 20s, student)

> The baskets are superb and that's not something you would put on your own bike, your own personal bike. (Int25, Neil, Scottish, 40s, professional)

Echoing to a degree Bijker's theories on how technologies are socially constructed (1995), these particular public bike users have constructed those bikes as artefacts with different meanings than their own bikes: the former is a more functional tool, owned by someone else - the city or a private company (it does not seem to matter which of these two in this context) to facilitate

urban movements; the latter is a personal possession, the appearance of which may be as important to some as that of their new suit or hair-style. So, while they may not care about the aesthetics of a public bus or taxi, they do care about those of their private material possessions. This in itself raises interesting questions of how the utility value of artefacts is trumped by appearance-related or status values – issues examined by scholars of consumer motives such as Richins (1994).

Finally while some users draw a clear distinction between the ultra-utilitarian public bike and their own slightly less utility-oriented machines (and, indeed, some do not as suggested earlier), the increasing dominance of public bicycles on the streets[143] with their overtly practical design characteristics such as the baskets would appear to be contributing towards a societal shift in which the bicycle is seen as a normal part of urban transportation, a theme I return to in Chapter 7. Further, this shift would appear to be the opposite to that described by Emanuel in relation to Sweden's (and indeed many countries') extreme technocratic rationalistic planning policies in the post-WWII years where "[t]he transformation of the bike from a utilitarian mode of transportation into a local suburban mode of (leisure) transportation was thus not entirely 'natural', but also the result of traffic and urban planning policies" (2012: 80).

Lights and locks

Another seemingly small but important strand to my argument (that the *dublinbikes* have a distinctive type of freedom associated with them) is that the bikes have lights and locks built into them thus making their everyday use even easier, a position raised by some of my interviewees. Neil put it as follows:

> [I]t's not just a fact that cycling is an improvement on walking, it's – on a *dublinbike* – with the lights on it, you don't have to think about your own bike – putting the lights on, taking them off and locking it up... And it is much, much easier to lock a *dublinbike* than it is to lock your own bike because [with your own] if you have a U-shaped bar then you need to negotiate the key and... the U-shape... and if you've got a rope [i.e. a chain] then you've got to negotiate that; but with a *dublinbike*, you just find a reasonable... fence or something that is secure and the wire is long enough. (Int25, Neil, Scottish, 40s, professional)

[143] There are no official traffic data available which distinguish between cyclists riding *dublinbikes* and those riding privately-owned bicycles. However, a ten minute traffic count conducted on Dame Street in Dublin on Tue 23rd September 2014 at approximately 17:30, suggested that approximately 20% of bicycles passing were *dublinbikes* bikes.

It seems then that the integrated and 'always-on' lights and built-in lock mean there are two less things to think about when using public as against privately owned bikes. These elements add to the ease of journeying and, I argue, are part of an explanation for the success of the scheme. Moreover, whereas in Germany for example, bicycles (with some exceptions – e.g. 'racing bicycles') must be sold with lights (Burleigh, 2012), this is not the case in Ireland. Thus it takes bicycle users here that little extra effort to look after a series of quite mundane tasks, such as buying lights, attaching fittings (requiring screw-drivers etc. and a little know-how), replacing batteries, and remembering to remove lights when the bicycle is parked lest they be stolen - as raised by Lulia:

> And my light was taken off my [own personal] bike before as well. And things like that are so annoying! Aarrrgggh! It's handier just to use the other bikes – the *dublinbikes*. (Int23, Lulia, 20s, graphic designer)

In summary, since the *dublinbikes* are fully equipped this is a further sense in which the machines are different technological artefacts[144] from ordinary bicycles and this difference informs distinct experiences of urban freedom.

5.2.3 Worry free, hassle free

I argue here that another dimension of the 'free and easy' experience is the freedom from the responsibilities of ownership. This includes being worry-free in regard to theft and vandalism, escaping the (perceived to be high) maintenance requirements of privately owned bikes, and other (perceived or real) hassles such as bicycle storage.

Theft and vandalism

According to some of my interviewees (across both genders), being a 'worry free' cyclist appears to be partly related to either not owning the bicycle one uses (i.e. using *dublinbikes*) or else not using one's own bicycle in the city centre:

> [T]he nice thing about the *dublinbikes* is that you are not worried about your property getting vandalised. You've great freedom with that. If I'm bringing my [own] bike into Heuston [train station] and then something comes up... then you've got that hanging over you. They are so hassle free, they are there when you want them and you are not married to them. (Int07, Ian, 40's, IT consultant)

[144] Of course I am not only arguing that one is dealing with technological artefacts, but a tightly integrated socio-technical system – as explored in Chapter 7.

> You are never worried about it being stolen – you know, it goes into its stand and it's locked... and you're not thinking [about it] (Int04, Maureen, 60s)

> I'd cycle into work and, but I'd still use *dublinbikes* as well because if popping out during the day, well my bike's brand new – I don't mind cycling into work cos I can lock it up down the back with the security but... I'd be a bit nervous cycling my bike around the city and just locking it up to a random pole (Int05, Selina, 20s, marketing person)

According to Lally (2011) of the "4,655 bikes reported stolen...[in 2010 in Ireland], 3,204 were in the capital" and Timoney (2014) estimates that the actual number of bike thefts is over six times greater than the reported number. Furthermore, there is additional evidence suggesting that theft and vandalism are common phenomena – e.g. Cahill's (2012) "Avoid the Thief" film, and the many disembodied bicycles on Dublin's streets as captured by artist Seán Hillen (2005). So interestingly, while fear of crime in the public realm leads to reduced use of mass transit especially by women (Yavuz and Welch, 2010), fear of crime in the form of bicycle theft appears to lead people to make greater use of public bikes.

Intriguingly, in a city seemingly awash with bike theft and vandalism, it appears as if there has been very little theft and vandalism of the *dublinbikes* themselves (Pope, 2010). This contrasts with the experience in Paris for example (Tironi, 2011b) and it confounded many commentators' predictions before the launch of the scheme (e.g. Boland, 2009). The apparent absence of vandalism of *dublinbikes* occupied the minds of many users:

> [I]t's hard to know [why they were not vandalised] because we do have a history of not minding stuff...I think in France there was an anti-Bourgeoisie element to [it]... which we don't really have here. I think they [the stations] are really well lit... To take [i.e. rent] one out – unless someone has been careless [re-docking the bike]... your name is attached to it. And if it ends up in the canal, you are going to answer for it. But that doesn't stop people coming along with a knife to the tyres but that hasn't really happened either. There just appears to be an acceptance – as part of the street furniture or whatever. (Int20, Danny, 30s, public servant)

> Part of [the explanation]... is that there is actually not much point in stealing them... even if you do manage to take one and you take the blue bits off, you are left with a bike that isn't actually that good!... It's heavy and you would probably get a better bike for marginally more... but that doesn't stop the random acts of vandalism. And that's the one

> I don't... [understand]... back in the day there was the bus stops always smashed – that seems to have [died out].... I wonder if people have just given up on them? (Int21, Maurice, 30s, software programmer)

> But from the pure mean vandalism thing which happens in other places, that doesn't seem to happen either. And I think they were clever enough to put them into strategic locations that are fairly overlooked... [and that] seems to have worked a treat. (Int22, Paul, 40s, engineer)

Whatever the combination of reasons for the absence of vandalism – and see also 5.3.2 below - my argument is that fear of theft of private property is prompting some to choose to enjoy the freedoms of using the public bikes.

Maintenance free 'sturdy bikes'

For some *dublinbikers*, being free from worrying about the vandalism of privately owned bicycles merges with a peace of mind of knowing that the public bikes are maintained:

> [Y]ou are not worried if someone kicks the wheel and breaks the spokes – you don't care... It's only yours when you ride it, when you cycle. It's not your problem, the puncture or anything. (Int12, Pawel, Polish, 30s, legal secretary)

> [A]nd you've no maintenance either... if there is a puncture you just leave it back, that's it. Costs thirty nine Euro to get your bike serviced now. (Int04, Maureen, 60s)

There is also a strong perception that the public bikes are indeed well maintained:

> I've used it a lot more than I thought I would – it's a super service, the bikes are great – they're very sturdy, they're all in good repair you know...well maintained as well and that's very important (Int02, Terry, 40s, IT contractor)

Interestingly the sturdiness of bikes is, for this user, a further reason to be free from worry - in contrast to using his own seemingly more fragile bike:

> [D][145] How come you don't have a bike? Did you just never get into it?

[145] I use '[D]' as short-hand for 'Damien' in some quotes to denote my own questions posed during interviews.

> Well I used to – I have a bike up in a shed in my parent's home but I never bothered bringing it into town because of security... And they would also be racer bikes with the thinner wheels which would worry me a bit more on, say, *Luas* [tram] tracks or that sort of thing. The *dublinbike* is nice and solid. (Int14, Alan, 20s, PG student)

The worry of being injured from falls on tram lines appears to be a real one with "cyclists", according to Cameron et al. in their analysis of accidents related to the *Supertram* in Sheffield, "the most at risk group, often sustaining serious injuries, followed by pedestrians and then motorists, including motorcyclists" (2001: 277). While there does not appear to be any (engineering) research exploring the relationship between bicycle wheel or tyre types (widths) and the likelihood of collisions on tram tracks so as to be able to confirm an empirical basis for the interviewee's observations, the respondent's comment above resonated with a small number of others' similar comments.

Overall, my findings support those of the evaluators of the very first 3rd generation PBSS run in Portsmouth University (see Chapter 2): just as the Portsmouth *Bikeabout* users "learned that the system was reliable and worked well, and not one bike was stolen or vandalised" and the evaluators acknowledged "the importance of good maintenance" (Hoogma et al., 2005), *dublinbikes* users stress the importance of well-maintained machines.

Free from storage headaches

Being free of the hassle of storing a privately owned bicycle – both at home and at places of work - was raised by several users as a further expression of the freedom of the *dublinbikes*. This was typified by the following:

> I would have loved to cycle [my own bike]. I think parking the bike would be a problem [though]... You would have to go upstairs with the bike and that, so I would never buy a bike... I'd like to have my own one because of the fact that I don't always get a [DB] bike in the morning but it's just the parking here that would put me off.... Everyone is piled on top of one another. Whereas I can just go out there and if you don't want to cycle it [the DB] home, you don't have to. (Int27, Joanne, 30s, college administrator)

The array of comments captured above around being free of the (perceived) hassles and worries of using one's own bike amount to a non-trivial attraction to using public bikes. These are all separate strands of a wider concept of freedom, a further dimension of which is described in the next section.

5.3 Financial freedom: cheap movement but not for all

The next dimension of freedom I consider relates to finance. My questions here are: in what sense does finance enter the minds of public bike users in regard to their use of the bikes compared to other modes?; does it emerge as an important aspect of the journey experience?; and is anyone financially 'unfree' to participate in public bike journeys?

5.3.1 Cheap movement

The freedom from having to spend money in order to be physically mobile - bar the very cheap €10 per annum registration fee[146] – was highlighted repeatedly by almost all *dublinbikes* users as an important, if not the defining, characteristic of the experience. Once a trip is under 30 minutes' duration, then it does not cost anything (J.C. Decaux and Dublin City Council, 2011) and approximately 97% of trips are free (Brennan, 2013). Peter captured it very succinctly:

> €10 per year, it literally is for nothing. It's brilliant. (Int10, Peter, English, 50's, union employee)

This fee contrasts sharply with the expense of motorised transport – bus, taxi and car (parking) - as raised by Maureen, Alan and Dermot respectively:

> I think the fact that it is free, it doesn't cost you anything is extremely satisfying, you know, it's one forty now on the bus for the shortest ride... (Int04, Maureen, 60s)

> To get that bike, to cycle out into [the suburbs]... it might cost me a fiver but it's less than any taxi. To be honest it's probably the same as any return bus fare... (Int14, Alan, 20s, PG student)

> Parking [the car] in the city centre is difficult and expensive [whereas] you just jump on the bike and it gets you close to where you are going. (Int19, Dermot, 50s, employers' association rep)

[146] At the end of 2013, the annual fee changed from €10 to €20, as discussed by Ginty: GINTY, C. 2013b. DublinBikes charges to double ahead of expansion. *Irishcycle.com* [Online]. Available from: http://irishcycle.com/2013/11/07/dublinbikes-subscription-charges-to-double-ahead-of-expansion/ [Accessed 17/Sept 2014].

That money is saved on transport through the use of *dublinbikes* emerged as a strong motivator for their use, and not only for students:

> And if it wasn't too late coming home we'd use them as well. So it has saved us on taxi journeys. (Int27, Joanne, 30s, college administrator)

In spite of Dublin having the highest disposable income per person of any county in the Republic of Ireland in 2011 (Central Statistics Office, 2013b: 11)[147], the regularity at which respondents raised the importance of the very cheap cost of using the public bikes took me somewhat by surprise.

5.3.2 Freedom for most - but not all

Crucially however not everyone is free to avail of the scheme. According to the 'General Conditions of Access and Use of the dublinbikes Service' (J.C. Decaux Ireland Ltd, No year stated (but assume 2009): section 4.1.2), to subscribe for a long term hire card, users must:

(i) be over 14 years of age and "Parental authorisation for user(s) under 18 years (but over 14 years) must be posted to the dublinbikes postal address listed under Article 1" (Section 4.1.2 (4) of General Conditions)

(ii) either have a credit card or have access to a direct debit system (Section 4.1.2 (2) and (3) of General Conditions)

Therefore the *dublinbikes* 'public' bikes are not available to those aged 14 and under and to those without access to a bank account. What is interesting here is that according to Gloukoviezoff, drawing on Eurostat data from 2008, the percentage of people in Ireland with access to a current account in a bank is just 83.2% and this contrasts with figures of 99.7%, 99.4% and 97.9% for France, Belgium and the UK respectively (2011: 22). Therefore, for similar (or even identical J.C. Decaux operated city bike) schemes, the public in Dublin suffer greater exclusion from participating in 'public' bike schemes than other EU residents. This is a clear example of financial exclusion which Gloukoviezoff defines as "the process whereby people face such financial difficulties of access or use that they cannot lead a normal life in the society to which they belong" (2011: 5). Interestingly though, despite this reality of exclusion, the bikes are not seen as

[147] While noting, of course, the broader national trends of declining economic activity measured, for example, using the personal consumption expenditure indicator (2009 to 2013): CENTRAL STATISTICS OFFICE. 2014b. *Personal consumption expenditure (Constant prices, SA), €m* [Online]. Available: http://www.cso.ie/indicators/default.aspx?id=5NQQ24A [Accessed 17/Sept 2014].

'bourgeois' targets for vandalism by youth from deprived areas (or else perhaps, the youth from the banlieus of Paris are more class conscious than their counterparts in Dublin)?[148]

Of course my argument here ties into broader arguments around immobilities and restrictions on international movements on the basis of class, race and gender as explored by scholars of migration such as Harris (2001) and Maxwell (2012), but more specifically it dovetails with recent scholarly work on how particular mobility systems produce or reinforce social inequalities - e.g. Richardson and Jensen's (2008) case study of the Bangkok Sky Train (in which their analysis revealed the "subtle hegemony of an elite mobility system") together with the work of Hine (2003) and Pooley (2011a).

What was striking for me was that the non-access to public bikes on the basis of needing a bank account contrasts particularly sharply with regulations around the use of buses, trams and trains in Dublin where neither age nor bank accounts matter (see for example Dublin Bus, 2014b). So, while the *dublinbikes* offer a very cheap means of vehicular movement, not everyone benefits. Curiously, it seems feasible that, in theory, a citizen could have access to a private car - if the car, driving licence, road tax and car insurance were paid for with cash - but would not have access to a public bike when relying on cash transactions because of the condition around the bank account. Or to think about it another way, a holiday-maker from (say) Belgium can come to Dublin and use the bikes, but a local Dubliner living right next the stations but without a bank account cannot use them. However, while the Irish case seems particularly striking given our high figures for people without bank accounts, the experience echoes that in the US where, according to Rose

> The users so far tend to be young, male and wealthier than the rest of the population. 'The rates of low-income ridership of all bike-share programs around the world is pitifully low. So we can only do better,' says Caroline Samponaro, of Transportation Alternatives in New York. (Rose, 2013)

[148] A further possible reason for the contrast in apparent vandalism rates of public bike schemes in Dublin compared to Paris might relate to the contrasting qualities of public transport systems in the two capitals: it might be easier for (disenfranchised youth) to travel between some of the banlieue of Paris and its city centre (where the Vélib' scheme operates), compared to travelling into Dublin city centre from more deprived suburbs of Dublin or the Greater Dublin Area. On the mapping of relative deprivation levels in Ireland, see KELLY, A. & TELJEUR, C. 2013. The National Deprivation Index for Health & Health Services Research - Update 2013. Small Area Health Research Unit, Department of Public Health & Primary Care, Trinity College Dublin

I now leave aside the issue of restrictions of access to *dublinbikes* from the perspective of being 'unbanked'[149], but in the next chapter I revisit restrictions on movements in the context of how the fear of urban cycling shapes journeys.

5.4 New explorations and habits

I move now to a further expression of freedom and autonomy in the urban environment.

5.4.1 New possibilities and adventures

According to Murphy (2010), 37% of her *dublinbiking* respondents[150] "are making new or different journeys which they did not make before Dublin Bikes was introduced for one reason or another". In my interviews I sought to prise open this unknown "for one reason or another" sphere of new and different journeys.

New trips patterns and possibilities

The arrival of the system has opened up the city to most users in ways which other modes do not. For some the new opportunities arose during the quite constrained lunchtime window and a new sense of freedom emerged.

For Mary, who worked just at the edge of the public bikes zone, it gave her "the freedom to go places that you just wouldn't have the time [to go to] if you were walking at that hour at lunchtime" (Int16, Mary, 50s, banking employee) while Jurgen expressed it as follows:

> I sometimes go home for a nap or for lunch. And then come back. And that's definitely something I didn't do before because it just wasn't worth it. It was just too much time invested. (Int09, Jurgen, German, 20s, PG student)

[149] To take a global perspective, I note here that about 2.5 billion adults lack bank accounts (CULL, R. J., DEMIRGÜÇ-KUNT, A. & MORDUCH, J. (eds.) 2013. *Banking the World: Empirical Foundations of Financial Inclusion*: MIT.). It follows then that if public bike schemes operated on the above J.C Decaux model are to become an even more common model for such schemes, then approximately half of the world's adult population will be excluded. Relatedly, it is interesting to observe the global distribution of public bike schemes on The Bike-sharing World Map, with no operating schemes shown on the African mainland: "Bike MEDDIN, R. & DEMAIO, P. 2014b. *The Bike-sharing World Map* [Online]. Available: www.bikesharingworld.com [Accessed 17/Sept 2014].

[150] Murphy surveyed 251 public bikes users as reported in her (unpublished) M.Sc. thesis: MURPHY, H. 2010. Dublin bikes: An investigation in the context of multimodal transport. Dublin Institute of Technology.

Richard also worked just outside of the canal cordon[151] and he elaborated on the new possibilities created for him:

> [I]t's being able to go to places that I wouldn't have dreamt of going to before – or maybe very infrequently... [so] say I hadn't been to the National Gallery for a few months, just hop on the bike, go down, saunter around for 10 or 15 minutes and come back....It allows me to do something that I literally couldn't do before... or even the Municipal Gallery which is further afield – get to that 10 or 15 minutes from Rathmines (Int03, Richard, 50s, statistician)

While this respondent reported on a lunchtime group activity facilitated greatly by the system:

> [W]e play a bit of five a side at lunchtime on Wednesdays, and a fair few lads would turn up on *dublinbikes* and they'd take the hit for the hour, or whatever... Most of them [the matches] would be within the city but we'd all be coming from different offices... Now, mind you, it's becoming a little bit less [common for footballers to arrive on the *dublinbikes*] 'cos more and more people are availing of the 'Bike to Work' scheme[152], so I don't know if that is having an effect on the *dublinbikes*... (Int20, Danny, 30s, public servant)

We can see also that some of these soccer-playing 'lads' are transitioning into becoming private bicycle owners, partly also in response to a separate policy initiative. This is a theme I revisit below. Additionally, Audrey, who used to take mass transit to commute to and from work in the city centre, discovered what was possible without having access to a car at lunchtime:

> And another time I used it actually was when I was working in [ORGANISATION XYZ] and one of the members of the family was up in the Mater hospital and I was able to get up

[151] The zone in which all of the original 44 *dublinbikes* docking stations lie sits within the Canal Cordon, an elliptically shaped area defined by the Grand Canal and Royal Canal, one on either side of the Liffey. See Appendix 7.3.

[152] "The Cycle to Work Scheme is a tax incentive scheme which aims to encourage employees to cycle to and from work. Under the scheme employers can pay for bicycles and bicycle equipment for their employees and the employee pays back through a salary sacrifice arrangement of up to 12 months. The employee is not liable for tax, PRSI, levies or the Universal Social Charge on their repayments." CITIZENS INFORMATION BOARD. 2011. *Cycle to Work Scheme* [Online]. Available: http://www.citizensinformation.ie/en/money_and_tax/tax/income_tax_credits_and_reliefs/cycle_to_work_scheme.html [Accessed 17/May 2013]. On the effects of the scheme, see CAULFIELD, B. & LEAHY, J. 2011. Learning to cycle again: Examining the benefits of providing tax-free loans to purchase new bicycles. *Research in Transportation Business & Management,* 2, 42-47.

and down very quickly and I couldn't have done that without the bikes. (Int15, Audrey, 50s, librarian)

In this following case, an array of leisure time pursuits of one type or another was opened up for this student:

> I mean it literally has changed... my patterns. Like I go to Smithfield, the Lighthouse cinema because there is two bike [stations] there. I wouldn't be a patron there otherwise because the *Luas* [tram] is a pain in the ass because the *Luas*'s don't connect. And it's too far to walk... [A]nd by the same token I probably wouldn't go to the gym in Trinity as much [without the bikes] because... [the gym] is at the other end of campus... I'd walk down but then... you're... out of the showers and clammy... and then you have to go home – so if I just jump on a bike you're home in ten minutes... And yes, I was seeing a girl who was also close to one of the stations on the North side and we sort of joked, you know, whether it was a factor or not in how long we lasted! (Int14, Alan, 20s, PG student)

In effect, space is being conceived of and experienced in new ways in response to the availability of public bikes - particularly so in combination with the disconnected nature of Dublin's transport 'system'. As Wickham has argued - in relation to (good quality!) public transport - it "literally ties the city together" (2006a: 151). Conversely of course, we have the "Frankenstein-created monster [of motorised automobility], extending the individual into realms of freedom and flexibility whereby inhabiting the car can be positively viewed, but also constraining car 'users' to live their lives in spatially-stretched and time-compressed ways" (Urry, 2006: 20).

New adventures and 'positive detours'

As well as enabling users to access pre-planned destinations, I argue here that one of the defining characteristics of the *dublinbikes* scheme is that, for many of my users, journeys have become ends in themselves. Many respondents spoke about meanders, voluntary detours and even slightly involuntary but interesting detours – such as the following:

> I have an interest in... just meander[ing] through the city through different routes and I enjoy looking at, say, different parts of Rathgar and [places] that you would never go otherwise – nice old Victorian terraces... I enjoy that. I much prefer to cycle down a residential road than the main thoroughfares. So it's a nice way to see the city I think... you find little lanes... and routes about the place – not necessarily as a route as a rat run, just to see different areas of Dublin.... (Int22, Paul, 40s, engineer)

As well as Paul's voluntary exploring, the positioning of docking stations shapes decisions on what streets public bike users take, as explained by Maurice:

> [I]t's good in that I think the stops are in odd locations. They are sort of just outside the main [thoroughfares]. You can't go to Grafton Street; you go to the Central Hotel there at Exchequer Street; or up the top of Grafton Street... Yes, so you are diverted into areas that you wouldn't [normally go to]. You know... if I'm walking to the bus stop to Stephen's Green, I would go up Grafton Street. I wouldn't go up those side streets but I actually prefer the side streets. (Int21, Maurice, 30s, software programmer)

Maurice's response suggests that some people use routes out of pure habit and miss out on experiencing streets which they prefer! The locations of docking stations prompt them to use different routes. Meanwhile, Neil enjoyed his (slightly forced) detour to his dentist as described here:

> I'm going down to the dentist at South Circular Road [SCR] and the nearest bike station is actually on the canal – it's not on the SCR – so that forced me to go up to the canal... so I'm cycling along looking for the bike station and it was just a lovely experience.... So, smell, sight, [it's] very relaxing going along there. I didn't consider it a negative, I considered it a positive detour and it had no purpose, just to enjoy it... and it was nice to go around the streets there which I wouldn't normally do, even if I had my own bike... but I did on *dublinbikes*. And it was nice to go around and see all of the red bricked houses and I enjoyed the detour as much for that than I did for getting me to where I wanted to. (Int25, Neil, Scottish, 40s, professional)

These recollections strongly suggest that for some *dublinbike*s users 'slow travel' (Dickinson and Lumsdon, 2010) or exploring on public bikes is different than on ordinary bicycles. In a seemingly technologically deterministic way, the positioning of docking stations (often sited just a little away from typical desired destinations) coerces users to experience streets and areas which otherwise they may never have used. The public bikes appear therefore to encourage some to explore the (sub)urban environment in ways not previously envisaged; they provide a different way of moving – meandering as against simply journeying from A to B. The crucial point is that for these *dublinbikers*, the journey is no longer just time lost between A and B. And compared to walking or using mass transit running on fixed or pre-defined routes, the use of the public bikes opens up the city in distinctive ways.

5.4.2 Migrating habits?

Meandering on public bikes was raised in another context by one respondent describing her 'city break' with her boyfriend the previous year:

> We got the bikes in Lyon... it's *brilliant* over there! There are stations everywhere and it was great cos you just park up then go to see something and you get to see a whole city like in a day, whereas before you wouldn't, you'd have to go on... [motorised public] transport... And we really enjoyed it there and I don't know if it was because of that or [otherwise]... if you walk you can only go a certain distance. With the bikes we got to see everything... both ends of the city in a weekend. (Int27, Joanne, 30s, college administrator)

A number of questions arise in response to Joanne's experiences and those of a few other *dublinbikers* with similar tales. Could it be the case that (Dublin-based)[153] public bike users are more likely to use equivalent schemes while abroad than non-*dublinbikes*-using Dubliners abroad? Similarly, might visitors and immigrants to Dublin who have used them in their homelands be more likely to use them here than visitors who have not used them at home? The former practice was suggested by Peter:

> I've used them in Paris, I've used them in London, I tried to use them in Nice. (Int10, Peter, English, 50's, union employee)

While the following *dublinbikers* had not used public bikes while abroad, they had either thought about it or actively observed them:

> No, Dublin is the only city. I had admired the bicycles in Barcelona – absolutely fantastic... the[y] are absolutely everywhere. [W]e have two kids, it's not practical – they don't have baskets on the handlebars to stick the kids in! (Int12, Pawel, Polish, 30s, legal secretary)

> No [I haven't used them in other cities]... but I have seen them in other places. We were in Lyon and they had the exact same bikes... I wouldn't up until now have been that enthusiastic a cycler, we just didn't bother getting them. But I think the more I would use the *dublinbikes* system, the more I would think about using them in other countries. (Int17, Joan, 30s, academic biochemist)

[153] Or those living in the Greater Dublin area (or indeed living anywhere in Ireland) who use *dublinbikes*.

> I think I'd be terrified to cycle in a strange city – in a foreign city. Wrong side of the road and everything. It's difficult enough walking and crossing the road without being on a bicycle – and an unfamiliar bicycle at that! (Int26, Tom, 40s, technician)

On being asked if, as a *dublinbiker*, he would now be more inclined to use such schemes abroad, Paul replied:

> I would, now that I've used them. If I thought they were as straight forward as the one in Dublin, I would – absolutely... they are a good way to travel... especially for seeing a city. Cos you tend to do an awful lot of walking on these trips...Whereas with the bikes, you'd be able to pop around the city a lot quicker... I would imagine that places like Rome and stuff would be fantastic – if you didn't get killed on the road! (Int22, Paul, 40s, engineer)

While it is clearly the case that one does not always do what one imagines one might in hypothetical situations, responses from immigrant and holidaying *dublinbikers* begin to suggest that those who have been socialised in cities with public bike systems may be more likely to use equivalent schemes in new (migratory or holiday) destinations. Furthermore, I propose that using a public bike may be becoming part of the skill-set of the (young middle-class) cosmopolitan urban traveller – especially given that there are now 747 public bikes schemes in the world (according to Meddin and DeMaio (2014b) but see also Chapter 2) compared with "almost 190 cities" having metros (Anonymous, 2013). On this and related points I am merely raising questions; more systematic cross city research of holiday-makers' and migrants' habits is clearly required to find out what exactly is happening. Such work would tie in with debates around diasporas and technology transfer, as examined by Kapur (2001) for example.

5.4.3 New purchases and habits

As well as prompting new trips and adventures, the arrival of the *dublinbikes* appears to be having other unpredicted effects – as I argue in this section.

Purchasing bikes (with baskets)

My data indicate that the arrival of the scheme prompted some *dublinbikers* to purchase their own bikes – as Brad and Selina explain:

> Well to be honest, I used to use the [DB] bikes a lot more... and then I moved [house], but after I moved, I went out and actually bought a bike, so it was based on me using the *dublinbikes* and seeing that it was pretty easy to get around... (Int18, Brad, American, 30s,

transport planner)

> Well... because of my experiences on *dublinbikes*, [I] got a bike for Christmas...and I'd recently moved to Ballsbridge so I decided then to start cycling in to work. I bought a bike!...[and] I bought a bike with a basket with it! (Int05, Selina, 20s, marketing person)

For Joan, the public bikes were an "influencing factor" as opposed to the only or main reason in buying a bike:

> So [while I was a post-graduate student, I] didn't need the bike [my own bike] any more. The bike kind-of went by the way-side then. I never bought a new one. And now we have kids who have bikes, so myself and my husband have just bought bikes so I'm starting to use them a bit more now.
>
> [D] And did you buy the bikes on the back of having the kids on the bikes?
>
> Yes.
>
> [D] It wasn't the public bikes which prompted you ?
>
> No. That kind-of helped in that I knew I remembered I could cycle a bike but it was more an influencing factor but the kids were the main reason for getting them. Yes. (Int17, Joan, 30s, academic biochemist)

Therefore the public bikes appear to act for some users as a bridge between being bike-less and being a non-cyclist on the one hand, to owning and using one's own bike on the other. My findings here row in behind the quantitative work of Murphy and Usher who found that "63.4% of [dublinbiker] respondents who own their own private bicycle said they purchased it as a result of using the dublinbike scheme" (2013: 15). The value of my qualitative contribution here is that it enables the development of deeper and more nuanced understandings of the behavioural processes at work.

Cycling again

Linked to the previous argument and important from a transport policy perspective, the *dublinbikes* appear to be prompting new habits of being adult cyclists in the city (e.g. for respondents in their 20's or 30's) and re-fostering older, faded, habits of cycling in the city for slightly older users. These two related but distinct categories of behavioural change were described, first of all, by Selina and then by Frank:

> Using the *dublinbikes* was my first time cycling probably since I was a kid ... I've used them [the DBs] now for about 6 months – but I suppose I've been watching them for a while – but because I'd never cycled in a city or anything before I was a bit nervous of them. (Int05, Selina, 20s, marketing person)

> [D] And had you already been a cyclist in the city? Did you already have a bicycle as well?
> No, back in my 20's and 30's, I lived in Dublin city centre – and I'd cycle around the city centre. I'm now in my late 40's so it's a while since I was on a bike. (Int24, Frank, 40s, business man (& former architect))

A further distinct category of current *dublinbikes* users were those who were (and/or are) bicycle users *in the suburbs of Dublin* but were not, prior to their use of the public bikes, bicycle users (or certainly regular bicycle users) *in the city centre*. Dermot and Paul exemplified users with such cycling life histories:

> [D] Had you previously cycled in the city?
> Yes, well not that much. It would be more on the outskirts of the city. I previously worked in Sandyford so I would have been cycling around Sandyford, Leopardstown, Stillorgan, those kinds of areas. (Int19, Dermot, 50s, employers' association rep)

> [D] Had you cycled in the city prior to using the public bikes?
> No, never. Like I grew up in the suburbs so I would have cycled as a child around the suburbs. That in itself would have made me familiar with cycling but not in the city. (Int22, Paul, 40s, engineer)

This is a further crucial argument. There appears to be a spectrum of past experiences with respect to urban cycling: from never having cycled since being a (young) child, to only having cycled in (less traffic dominated) suburbs, to having cycled in the city but not in the last 10-20 years, to having been an occasional recent (or current) cyclist – and even to being a regular cyclist on one's own bike. For each of these broad categories of past experiences, various life events shaped my respondents' travel habits[154] and the arrival of *dublinbikes* appears to have connected in distinct ways with people with different levels of experience of (urban) cycling and appears to have nurtured new or almost forgotten habits. The *dublinbikes* have acted as a catalyst to get

[154] My comments here resonate strongly with the recent work of Helen Jones who has studied the changes and continuity in individual active travel behaviours over the life course: JONES, H. 2013. *Understanding walking and cycling using a life course perspective* PhD, University of the West of England.

"non-cyclists, like me, into a scheme they use" (Int34, Claire, film producer, 30s) and to support others, like Brad, in becoming more habitual urban cyclists:

> I think the bikes have been a good intermediate point for people like myself, who weren't [cyclists] or were a little bit afraid of biking in the city. It gives you a chance to try it or experience it without too much commitment first. (Int18, Brad, American, 30s, transport planner)

Individual and collective habits (and practices)

New habits have emerged as users have integrated public bikes into their routines. This is especially the case for multi-modal commuters, with Murphy and Usher showing that 39% of *dublinbikers* use the bikes in conjunction with another mode to complete trips (2011: 6)[155]. In many cases, the bicycle has replaced the slower walking elements of trips or even tram elements – as Ian, who commutes by rail from outside of Dublin County as far as Heuston station, explains:

> I'm nearly religious about it. I don't want to skip it [i.e. the *dublinbikes* leg of his multi-modal journey]. And I have cycled it on really really wet days cos I'm sort of saying, you're going to get wet anyway. I'm in the frame of mind now that the first leg of my [post rail] journey is to get the Dublin Bike, I'm religious about that now cos I'd just be browned off if I was only walking over to the *Luas* [tram] and waiting for the *Luas* there so it really has to be like a blizzard before I won't hop on it. (Int07, Ian, 40's, IT consultant)

His reference to being 'nearly religious' about using the public bikes suggests both a routinisation of the practice, but also an element of fanaticism or even addiction: the public bike use has become firmly embedded in his life for (as he states elsewhere) health and convenience reasons.

Other users commented on a new practice which has emerged in response to those occasions, relatively rare it seems, when bikes are out of action:

> [If you get a] puncture or anything, just turn the saddle backwards – that's kind of interesting that people came up with that... just by themselves. I don't think that was planned by anybody, it was a kind-of spontaneous idea, an excellent one... (Int12, Pawel, Polish, 30s, legal secretary)

[155] Note also the wider research examining ordinary bicycles, i.e. privately owned bicycles, as 'feedering modes' for public transport. E.g. MARTENS, K. 2004. The bicycle as a feedering mode: experiences from three European countries. *Transportation Research Part D: Transport and Environment,* 9, 281-294.

> it is nice – you have that little code whereby if the saddle is backwards there is something wrong with the bike... I don't know [how I heard about that] – just, you know, learnt it! (Int14, Alan, 20s, PG student)

> there is no [official] way of telling the system that you've just left back a bike that's broken... this is how I suppose people would have [developed] a solution to these things. They got the bike and they turned the saddle down (Int21, Maurice, 30s, software programmer)

A further user commented on seeing "a red ribbon around one of them. I hadn't really noticed that the tyres were down but obviously it had been spotted" (Int15, Audrey, 50s, librarian). In the absence of a more formal means of tagging damaged *dublinbikes* – unlike the 'Boris Bikes' in London which have a special button at the docking slot for users to press when encountering a damaged bicycle (Transport for London, No year given) - Dublin users have either spontaneously invented a way (or ways) to notify scheme operators and the public that a bicycle is broken, or have imported a similar habit from abroad, possibly from *Vélib'* in Paris where the 'turning the saddle around' practice has been institutionalised and refined[156].

Interestingly 'once-off' type events appear to have prompted a small number of further new practices and indeed tests of the trust of complete strangers. As Pawel recounted:

> [A]bout the time that the queen and Mr. Obama came to Ireland, plenty of the [DB] stations were closed, including the one at Seán O'Casey bridge – people would still take bikes on the South side, cycle up there [but]... you couldn't leave them at the station... cos the Guards wouldn't let them but there was a queue of people... waiting for [bikes] to take... and cycle to the Southside. It happened to me a few times in this short period... Yes, that was something nice [- members of the public taking bikes from other users directly rather than from docking stands]... I gave him [the person taking the DB] my business card and asked me for the number – so there was a bit of a check there. But at the same time, the bikes are ugly, heavy, and not really very fast – who in their right

[156] The following information appears on the official *Vélib'* website:
"Should you find a problem with your bike, you can tell other users that the bike needs attention, so saving them making the same discovery. It's also helpful for Vélib' maintenance staff. It's very simple – if you find a problem, simply turn the saddle:
- 1/2 turn for serious problems (the chain is off, flat tyre...)
- 1/4 turn for more minor problems (gear issues,wheel issues...)
MAIRIE DE PARIS. 2014a. *The 10 Vélib' Commandments* [Online]. Available: http://blog.velib.paris.fr/en/2012/02/28/the-10-velib-commandments/ [Accessed 19/Sept 2014].

> senses would try to steal them. I mean seriously, the worst thing... would be that someone would dump the bike somewhere. (Int12, Pawel, Polish, 30s, legal secretary)

Conversely though this older *dublinbiker* felt there was little trust to be found in the city:

> If you meet someone in a supermarket in Achill [a remote spot in the west of Ireland], you'll say 'hi'... and you'll start a conversation about nothing... and be chatting to them like a total stranger or even a tourist you know if you meet them on the beach – but in the city, people go about their business and there are so many – I don't know, it's not strange that they're strange – I think it's trust, they don't know if you are going to rip them off ... if they are safe to be around, I think trust, that might be the issue. (Int04, Maureen, 60s)

The significance of these slightly miscellaneous examples is that the *dublinbikes* provide a lens to understand society in the early part of the second decade of the new millennium: the bikes can enable users to be civic minded and helpful to one another, but this is by no means a city wide experience. I return to this theme in the next chapter in my discussions around sociability.

5.4.4 Shaping decisions on residential choice?

There is some evidence to suggest that the arrival of the scheme and positioning of docking stations is shaping, at least to some small extent, bigger decisions on, such as, where to live. Miklos, who had recently arrived from the Czech Republic explained it like this:

> I'm living in the city centre, near Talbot Street – there is one station on Talbot Street – and it was one of the reasons to find an apartment there – I wanted to use this possibility to go by bicycle. So it was one of the reasons, not the first, not the second one but one of them. For me it is one or two minutes from my apartment so it is really really near. (Int13, Miklos, Czech Republic, 30s, IT contractor)

Claire concurred, explaining that "when my house-mate and I were looking at a number of places to move into, I don't think they would have been a decisive factor but the fact that there was a bike station at the end of the road was a nice bonus" (Int34, Claire, film producer, 30s). Meanwhile, for Fionn and his business partners who were moving office to a new area, the presence of a public bike station "figured somewhat in our thinking" (Int30, Fionn, 30s, digital media SME person)

A cursory search using the terms "DAFT" (a property website in Ireland) and "Dublin Bikes" yields

several property results which demonstrate that some letters of property are stating in advertisements that their properties lie close to docking stations. Here are two examples:

> CENTRAL LOCATION : Close to Mater, Temple Street and Rotunda Hospitals, Dorset Street - bus corridor to Dublin Airport and City centre. Dublin-bikes station on the street.(DAFT "Ireland's biggest property site", 2013a)

> It is situated in a nice, quiet residential area but is only a two minute walk from an array of restaurants, pubs and other amenities. There is a Dublin Bikes station across the road, the Charlemont Luas stop is only a 7 minute walk away. It only takes fifteen minutes to walk to Stephen's Green and ten minutes to Ballsbridge village. (DAFT "Ireland's biggest property site", 2013b)

I have made no attempt here to assess systematically how frequently the term "Dublin Bikes"[157] is (or is not) mentioned in property advertisements. However some evidence of "Dublin Bikes" being included in property advertisements suggests that the public bike concept is entering wider popular discourses. The property letters must be working on the assumption that others value having a docking station nearby (even if they themselves do not value this): it appears to be a selling point for a property. There is another irony here of course in that the public bikes seem to be used to help elevate property prices, an intervention that would sit uncomfortably with the political philosophy of the Dutch Provo - for another of their *White Plans* was the *White Housing Plan,* an intervention aimed at stopping real estate speculation (Voeten, 1990). This example reinforces one of my overarching arguments in regard to the complete transformation of the conceptual underpinnings of public bikes since the 1960s.

This final argument on how some *dublinbikers* might 'self-select' to live near public bike stations connects directly to complex debates around how it might primarily be residents willing to travel by public transport that end up locating in such places with resultant minimal impact on car-user households (Nurlaela and Curtis, 2012). It goes beyond my work to explore this question further, but future research may wish to address these questions in regard to public bikes. The last point I wish to make here is that in engaging with these questions, I begin to transition from thinking about individual journey experiences – my first case study essentially, to questions of systems change – the focus of my second (linked) case study. I revisit this sphere of enquiry in Chapter 7.

[157] Or "*dublinbikes*" or other variations used.

5.5 Public-biking freedoms- chapter conclusions

I have argued in this chapter that there is a distinctive type of freedom associated with the *dublinbike*s compared with other modes in Dublin. The vast majority of users strongly associate their experiences with speed and convenience, and this is accentuated by the design of the main artefact itself: the basket-accessorised sturdy two-wheeler. For these users, the public bikes might be thought of as the 'speedy feet of the city', a direct equivalent to "the speedy feet of the nation" as Steele described bicycles in early 20th century Japan (2010: 182). There is also the suggestion that the developmental trajectory of privately owned bicycles (in Dublin) might be shifting – partly in response to the physical characteristics of the *dublinbikes* – a point I return to later in Chapter 6.

Strikingly though, while it is the public bike *system* that allows for the flexibility and freedom that practically all respondents speak highly about, it is also the source of immobility when, all too often, docking stations are full or empty. On the other hand though, there is a particular type of freedom that comes from not having to worry about leaving one's own possessions in the public view in the city centre. Furthermore I argued that this highly individualised form of urban mobility was generating detours and new urban adventures and thus I add weight to the challenge of the notion that what happens between A and B is simply dead time. I also proposed that public bike habits may be migrating from country to country as populations shift and take vacations.

It seems then that the *Vélib'* tag of Paris' scheme (Mairie de Paris, 2013) is not an inappropriate name for a public bike system, although the largely (but not completely) forgotten aspect of this version of freedom is the exclusion of a significant minority of the adult population in Dublin from using the system. If such systematic exclusion prevailed for other forms of public transport, such as buses for example, one would expect to hear a loud public outcry.

Referring back to Chapter 3 (and section 3.2.4), one main dimension of freedom that I did not engage with in this chapter was questions around being able to choose with whom one travels – one of the main attractions of the car. I turn to this and other journey experiences in my next chapter.

Chapter 6 – Sensory and Sociable Journeys?

6.1 Introduction

My descriptions and analyses in this chapter respond directly to the questions raised in my literature review (in section 3.3) and then summarised at the end of that chapter with the overarching question: what is distinctive about public bike journey experiences as compared with those of other urban modes?

I set out to answer the question under three main headings: the sensory and embodied experiences of public biking (in 6.2); the emotional dimensions of journeying and navigating through the city (in 6.3); the socialities associated with travel (in 6.4). I end the chapter with some further discussions of my findings.

6.2 A heightened sensory and embodied experience?

I consider here what might be called the five traditional senses of sight, sounds, smell, taste and touch and also briefly reflect on whether (or not) *dublinbikers* sense the seasons and nature any differently from others journeying in the city. While initially I do not differentiate between life on the street as an urban cyclist more generally and life as a public biker, later on in the chapter I confront the potential differences.

6.2.1 Observations of places and people

The majority of my respondents indicated that they think they see more of 'what's going on' while journeying on public bikes than they do by motorised modes such as the tram or car or bus. I illustrate this argument with a number of examples, firstly through Ian's eyes who contrasts bicycling with tram travel.

> [O]n the really odd morning where you cycle up and you just look around you and you are crossing the river... and you see a nice vista, you won't get that on the *Luas*... all you see [on the tram] is the sides of buildings... I remember there was one lovely morning, looking out to sea and I kind of slowed down and stopped and [was] just thinking... god if you were on the *Luas* now you never would have noticed this... when you are on the bikes and stopping you do get a better chance to see [the city] (Int07, Ian, 40's, IT consultant)

The above *dublinbiker*'s delight at having a new perspective on the Liffey resonates with visual artist Fergal McCarthy's belief that the river is hidden away in the thick of an East-West motorway and invisible to most people most of the time[158] (TEDx Talks, 2012). Referring again to the idea that "urban blue[159] may be considered as a therapeutic landscape" (Völker and Kistemann, 2013: 122), I suggest here that having the flexibility and freedom to deviate from fixed mass transit routes so as to enjoy the sights and ambiance of the river may have health-enhancing effects, particularly as a counter-experience to the hostility of the traffic, as I discuss later.

Another public biker observed that:

> [T]here are some beautiful buildings in Dublin – even that's fantastic there <pointing through the window at Castle Market on Exchequer St. during our interview>, if you are on a bus or in a taxi or a car you miss all that... I think you are more aware of your surroundings, I think it's more – maybe spiritual is the wrong word – but you are more in touch with the city I think than in a car or a bus... I wouldn't have noticed that in a bus or a car... [while] on a bike you've a lot more time to observe than in a car... Observations of people – why is that fella trying to kill the baby by pushing the pram out in front of the bus while the lights are red - why doesn't he wait the 30 seconds? Why is that woman shouting across the street? I'm just nosey! (Int10, Peter, English, 50's, union employee)

Engwicht (1999) argues passionately that we are all naturally nosey and when we spend time in the street, we use our imaginations to invent stories about passers-by. We yearn to be intrigued and stimulated by the external (co-present) world, not shut off or 'carcooned'. However, it is not just the beauty of the city that is seen more on the bike – it's also the squalor and rubbish too as commented on by Miklos, a recent migrant from the Czech Republic:

> [It is especially bad] in the city centre – it is not so bad outside... and when we are talking about cycling, what I don't like is – there is too much broken glass on the streets... And sometimes it is really everywhere, especially on the weekends I would say, the people are drinking – Friday and Saturday... A few months ago I was at home on holidays [in Prague] and... the first thing I could say was 'something is better', not only the weather but I think

[158] His solution is to "construct an 8km long linear park along the banks of the Liffey in Dublin. One lane of traffic at both sides of the river could be removed and the resulting space would become a walkway with trees, planting, playgrounds, markets, skateparks and many other attractions. The park would connect with the boardwalks and the campshires in the docklands unifying all the space around the Liffey as an incredible amenity for Dubliners and visitors to the city" *The Liffey Quays, A Ribbon Of Green: Fergal McCarthy at TEDxDUBLIN* 2012. Directed by TEDX TALKS.

[159] Meaning all visible surface waters in urban areas.

> it was cleaner, a little bit nicer with more green places... and definitely not so much rubbish everywhere... Sorry about that! (Int13, Miklos, Czech Republic, 30s, IT contractor)

Broken glass on the streets is of course far more perceptible - and alarming - to those on bicycles than other modes as it may ultimately put a halt to their gallop. I revisit this sphere while examining embodied experiences below.

Pedestrians

Pedestrians are at the forefront of many public bikers' minds as Sandra explains:

> When you walk, you don't really totally take in what's happening on the road but when... you are cycling you are kind-of watching pedestrians in case some of them *leap out* which is what they tend to do and you are also noticing the cars and the buses so I think you are closer to all the traffic options than you would be on foot. (Int08, Sandra, English, 30ish)

In a way, the cyclist has a double-consciousness – "a sense of always looking at one's self through the eyes of others" (Du Bois, 1897) - because of the need to be aware of potentially destabilising pedestrian movements and drivers in a much more powerful position. Conversely though, some other respondents felt that the *dublinbiker* sees less than his or her walking counterparts but, curiously, more than while cycling a typical privately owned bicycle

> Compared to walking, you probably see less. You can't really look around when you are on a bicycle in the city. In terms [versus] my ordinary bicycle, I'd probably see a bit more because I'd be going slower, stopping at all of the lights!... I generally look at [walking and cycling] as completely different beasts. Do you know?... Not better or worse, it's just different. (Int26, Tom, 40s, technician)

While there are (slightly) mixed views then on 'who sees more' – pedestrian or *dublinbiker* - there is broad support for Forsyth and Krizek's position that being on a bike is similar to being a pedestrian in the sense that there is a "lack of enclosure [which] may mean they perceive more environmental detail" (2011: 536).

Observations of the behaviours of dublinbikers - versus 'other cyclists'

Some public bikers who are new to urban cycling begin to notice subtle aspects of cycling behaviour previously unnoticed and while there appears to be a consensus amongst respondents that the cycling behaviours of *dublinbikers* differ from those of other cyclists, there are a range of

opinions as to who are better behaved cyclists.

> [T]here's kind-of cyclist's etiquette I suppose <laughs> that you never would have [seen before]... it's not something I would have thought about before I started cycling...just even... in terms of signalling, or if you are using the cycling lane and you're going a bit slowly and someone wants to pass you by – like moving in... and then there is the... serious cyclists who are in all of their gear – the hard-core – and then there are the people like me [on DBs] who are sort-of fluting around! (Int05, Selina, 20s, marketing person)

As against 'fluting around', some respondents think that *dublinbikers* are, in fact, better behaved than other cyclists:

> Well I've only used *dublinbikes* in the city. I've never used my own bike.... My only observation of people using *dublinbikes*, more so [than] people using their own bikes, is that cyclists are not the best behaved people using the roads.... [but] that they [the DB users] are probably better [behaved] because the bikes are quite heavy so it is more difficult to nip in and out. (Int15, Audrey, 50s, librarian)

Conversely, for Maurice, a long time 'ordinary bike' cyclist and DB user, the opposite was the case for him:

> well a pet hate of mine is the *dublinbikes* people who go through the lights so I make a point of stopping them which does annoy people... the way I see a lot of people using [the DBs] is very like walking... because they would cycle the wrong way up a street – and they will take liberties with lights and break gaps in traffic exactly as you would if you were walking... it doesn't do the image [of cyclists generally any good]. (Int21, Maurice, 30s, software programmer)

Joan, who recently returned to the bicycle after a decade or so, felt sorry for other cyclists because she reckoned

> other cyclists find us a bit irritating cos I'd say I'd be a bit slower than your average cyclist, and I think we get in other cyclists' ways... So I'd say we annoy the hardened cyclists a bit! <laughs>... But you know, we only have the three gears, not 21 gears, so I'm a bit slow for that reason. (Int17, Joan, 30s, academic biochemist)

Her account shows some consistency with that of Tom who is a long-time cyclist in Dublin and occasional *dublinbiker*:

> Well you certainly notice them. I mean when I am on my own bike, you know, they [the DB-ers] kind-of stick out. You kind-of treat them differently to other bikes. And because they are possibly inexperienced cyclists, you tend to give them a wide berth... They probably bring in some more unpredictability into the bicycle traffic as well.... Whether that's just because they go slower and they are easier to spot, but you tend to be a bit more aware of them and class them differently to your ordinary cyclist... But they add to the density of bikes as well. (Int26, Tom, 40s, technician)

While there are no published records comparing the speeds of urban cyclists (public bikes versus other bikes) in Dublin, my finding here is that many *dublinbikers*– and especially those new to city cycling or those who have returned to it - think they are different to other cyclists on the street, mainly in the sense that they move more slowly. Other *dublinbikers* who are also seasoned commuters on their own bikes agree there is a difference, and they generally sense that the new cyclists on *dublinbikes* are less law abiding and more unpredictable. I revisit this argument in my systems chapter when I begin to assess what the wider effects of this more unpredictable behaviour might lead to.

6.2.2 Sonic attacks and cycleways

A small number of *dublinbikers* spoke about their aural journey experiences as compared to other modes they use. In contrast to mass transit experiences, some users of the public bikes indicate that they are more tuned in to the sounds of the street and the city while on the bike:

> Well, I mean, if I'm on the *Luas* [tram] I tend to have the ear-phones in and I'll switch off a little bit – and obviously [on the DB] you just can't do that like, so you are more conscious of, obviously, traffic noises – if somebody beeps, they are probably beeping at you. Whereas if you are sitting on the *Luas* and someone beeps, it's not your business and you don't care about it. That's it really, other than the general noise of a city. (Int20, Danny, 30s, public servant)

Or more simply, "[y]ou are more aware of the sounds. Definitely like, the sounds of the traffic – you are probably aware of people too"(Int01, Ger, 20s, student). This position supports the broad findings of Aldred and Jungnickel (2011) who maintain that the cyclist is generally more open to the sonic environment than others. However, one can be too open to this environment with this

more senior *dublinbiker* feeling that, while on the bike in the heart of the city "the ambulance would blow your head off" (Int04, Maureen, 60s). Her feelings at that moment evoke Michael Moorcock's sonic attack:

> These are the first signs of sonic attack:
> You will notice small objects - such as ornaments - oscillating
> You will notice vibrations in your diaphragm
> You will hear a distand hissing in your ears
> You will feel the need to vomit
> You will feel dizzy
> You will have difficulty focussing
> You will need to breathe more rapidly
> There will be bleeding from orifices
> There will be an ache in the pelvic region
> You may be subject to fits of hysterical shouting or even laughter
> These are all sign of imminent sonic destruction
> (Moorcock (Hawkwind), 1973)

Moving on from sonic destruction but tying in with Jungnickel and Aldred (2013) and their theories of how cyclists mediate their sensory exposures, this young female *dublinbiker* recalled her more soothing sonic experiences as follows:

> Well I'm quite bold in that I listen to music on the bike, so I tend to kind-of day-dream which is probably a bad thing.... [After a scare though]... I do tend to stop at red lights and things like that. I try to be conscious in a way and in other ways I'm not conscious. Well I think it is the same kind-of experience I have for walking cos I use my headphones when I'm walking as well – so I tend to just day-dream and drift off into another world. Pretend I'm on the stage singing! Ha! (Int23, Lulia, 20s, graphic designer)

The questions her experiences raise relate to understanding the types of routes and roads that *dublinbikers* (and cyclists more generally) feel at ease using such mobile audio devices which are the norm – in the form of car stereos – for drivers and passengers. Is it mainly on the newly emerging wide segregated cycle tracks such as the Grand Canal cycleway that cyclists use them? Currently this is still unclear, but Alan explained that the tranquillity of this and other quieter routes allowed for some other multi-tasking while journeying:

> I was texting her – no she was texting me – and I replied cos it was just such a quiet road that I was [cycling] on – and I had to stop myself from telling her [my mother] that I was texting from the bike cos I knew it would annoy her... Think it was a Sunday afternoon with no-one around. (Int14, Alan, 20s, PG student)

Pawel agreed on the qualitative difference in the experience of using the traffic-free urban route as against other routes in the city:

> [T]hen the nicest part of the journey is the last one – Harcourt Terrace and then the few metres along the canal to the Charlemont station... it's a cul de sac, Harcourt Terrace – so the traffic is either not there or is slow, so once I get there I am pretty much home... Yes, the cycleway. (Int12, Pawel, Polish, 30s, legal secretary)

To conclude, my findings - supporting those of Jungnickel and Aldred (2013) on urban cycling more generally - suggest that the aural and indeed the mobile electronic experiences of everyday public bike journeys are important to some *dublinbikers,* with a significant minority of my respondents using some sort of mobile electronic devices (mp3 players or phones) while cycling and with further *dublinbikers* using one of a number of apps to help with finding docking stations with free slots (see Chapter 7). While current engineering design guidance stops short of explicitly advising that new cycle routes should cater for the head-phoned cyclist, there is an acknowledgement in the new[160] guidance that 'comfort' matters and official webpages on the *Five Needs of Cyclists* include an image of a woman (un-helmeted) cycling and texting / checking her phone (National Transport Authority, 2011a). These points also serve to remind us of broader contextual shifts in mobility practices, as exemplified with the rapid increase in the availability of WiFi on public transport services (see for example Dublin Bus, 2014a, Bus Éireann, 2014, Aircoach, 2014)[161]. This is all especially interesting in the context of 'peak car' debates and, as Goodwin and Van Dender point out, there being "little doubt that the changing propensity of young people to drive is a very widespread phenomenon of great potential importance" (2013: 251).

[160] 'New' in the sense that it replaced the older design guidance: i.e. DUBLIN TRANSPORTATION OFFICE 1997. *Provision of cycle facilities - National Manual for Urban Areas,* Dublin, Government Publications.

[161] For example, on 3rd July 2014 Dublin Bus announced that "free wireless internet access for all passengers is now available across its entire fleet of 917 buses". DUBLIN BUS. 2014a. *All aboard with Free Wi-Fi on all routes* [Online]. Available: http://www.dublinbus.ie/en/News-Centre/Media-Releases-Archive1/All-aboard-Dublin-Bus-with-Free-Wi-Fi-on-all-routes/ [Accessed 21/Sept 2014].

6.2.3 Smells and tastes- eating and drinking en route

I turn my attention now to 'smell-scapes' while keeping in mind Classen et al.'s (1995) rich descriptions of Nero's Rome as alluded to earlier (section 3.3.4). While my respondents needed a little prodding to turn their minds to the subject, my findings reveal that around one quarter of respondents recalled particular olfactory experiences on their *dublinbiking* journeys.

Fumes and food

Diesel fumes appear to be the dominant smell that is commented on and there are mixed views on how pungent these are, and on whether or not the smells from buses are improving. Seánín, on the one hand, commented that "the emissions, from even the newer buses... don't seem to be kept up to spec" (Int06, Seánín, 50s, tour guide), while Frank elaborated on why cyclists are hit with more fumes than walkers:

> The buses... starting up generate more fumes. And you tend to be...[behind] the bus when that happens... But even as they are going past, they are emitting fumes in very close proximity. Whereas when you are on the path you can be 2 to 3 metres away. That would be the dominant smell. Cars, you don't really have a sense of it any more. (Int24, Frank, 40s, business man (and former architect))

Smelly buses were also mentioned by a small number of other respondents, but from a passenger's perspective:

> I hate being on the bus! It's noisy and smelly and takes ages. I'd prefer to walk and be outdoors. (Int08, Sandra, English, 30ish)

Interestingly there was no mention of the 'stench' of the Liffey - only a single reference to the smell of the canal: "Smells? Well, the smell of the canal! Well that's about it really!" (Int23, Lulia, 20s, graphic designer)

Other odours tickling the noses of *dublinbikers* were related to food – "I think the smell down around Jervis – the Chinese quarter... sometimes when you pass, you definitely smell the food" (Int04, Maureen, 60s) - and the hopstore:

> [I]f I've noticed it [smell] at all it's mainly positive [and] occasional – one of my favourite ones is the smell around the hopstore, that distinctive smell I think is really nice, I wouldn't say I specifically go down to smell it but the route I take... I would go down the

> nice quiet roads that I came down today and around by the hopstore... but the smell of the Guinness hopstore is distinctive and interesting and pleasant – and you wouldn't get that on a bus... (Int03, Richard, 50s, statistician)

While some *dublinbikers* sense those food related smells, it seems walkers sense them in a more accentuated form – "extract vents from fast food joints pumping out on the street" (Int24, Frank, 40s, business man (and former architect)) – and, as Peter put it

> [W]hen you are walking down Grafton Street I think everyone enjoys the smell of Bewleys [café]... You would [get a certain amount of that on the bike but] [y]ou couldn't specifically point to something as obvious as Bewleys (Int10, Peter, English, 50's, union employee)

In summary, while the smell of diesel registers with some respondents, in general it seems that Dublin has either become quite sanitised or else *dublinbikers* are repressing the city smells in some way. This is what artist Sissel Tolaas thinks when she says that "we've over-civilized ourselves to the point that we've lost touch with most of our senses" (Campbell, 2009) and this happens because smells are associated with degeneracy.

Food on the move

Finally, while not raised by my interviewees, I imagined initially that a striking difference between journeying on the public bike as against other modes would be the difficulty in eating or drinking en route. According to Laurier et al., in-car dining has become quite normal:

> The morning traffic jams that congest our cities have become for many the start to their working day. We eat breakfast in our cars, phone friends, talk politics... Cars have, in short, become places we inhabit without necessarily being places designed to be habitable. (2008: 1-2)

While Dublin Bus asks customers not to "drink or eat on the bus" (2012) it is certainly possible to do so and seems to be a normal part of public transport (e.g. "eating while texting" (Russell et al., 2011: 132)). Drawing on arguments in the previous chapter, one of the main attractions of public biking is the flexibility of being able to stop at one's will - in contrast to driving and parking in cities (Hagman, 2006) – and this includes stopping for food. While it was a once-off occasion and occurred while 'off-duty as a researcher' (see Section 4.4.6), I spotted a couple eating and

chatting while cycling (Figure 6.1), using their baskets to store half-eaten breakfast rolls[162]. So while it may well be rare, perhaps the trend of consuming (fast food) while on the move is spreading to biking. This would appear to be represent a further step away from the anti-consumerist philosophy of the Dutch Provo.

Figure 6.1 –Breakfast roll bikers on Aungier St., Dublin 2 - Oct 2012

6.2.4 Tactile and embodied experiences

Around one third of my respondents discussed aspects of their public biking journeys which brought embodied or tactile experiences to the surface. Again, my aim here was to find out what, if anything, makes the experience unique compared to other ways of moving about.

Tram tracks and cobbles

Tram tracks have a special place in cyclists' hearts, so much so that there is dedicated traffic sign to warn of their hazards (Figure 6.2). Wet cobble stones are another favourite. Ger, a new adult cyclist in the city and recent arrival from west Kerry[163], recounted his own slippery encounter:

> [S]ometimes I would go along the Luas [tram] lines – it's just quieter... one night... it was pouring rain... by the back of the Four Courts - it was just so wet that the bike just went from under me... on the tracks. And I think it was a mixture of the tracks and the cobbles. (Int01, Ger, 20s, student)

[162] Cf. The discussions in Chapter 5 on baskets and freedom.
[163] In the south west of Ireland.

Incidentally it was in response to how the cobbled streets made cycle journeys uncomfortable that Scottish veterinary surgeon John Boyd Dunlop was prompted to develop the pneumatic tyre and subsequently establish "the Pneumatic Tyre and Booth's Cycle Agency" on Dublin's Stephen's Street (Mitchell, 2008: 43) – a location right in the heart of the current *dublinbikes* zone. And, as Mitchell recounts, Dunlop's invention inaugurated "a new age of transport and a massive demand for latex by manufacturers of cars and bicycles" which led, in turn, to the opening up of vast areas of the tropics "in the name of 'civilisation'" (ibid.).

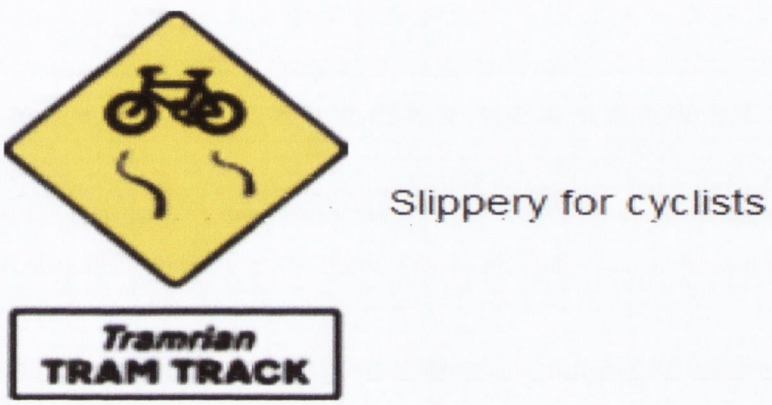

Figure 6.2 – Warning sign: "Slippery for Cyclists" (Road Safety Authority, 2007)

Bumpy roads - and smooth cycleways?

Several respondents highlighted the poor road surfaces as experienced on a heavy public bike. Seánín stressed that

> [T]hey're a pretty bumpy road on the *dublinbike* – they're heavy at the front with no suspension, with the dynamo I suppose and the lock... and they're pretty lively on the front – you want to have a good grip on the handlebars because the way our streets are reinstated after surfacing, sometimes the gratings on the man-holes aren't quite flush, you know. (Int06, Seánín, 50s, tour guide)

While these are unimportant mundane matters for many citizens, for public bikers with a basket stuffed with breakfast rolls or a brand new *MacBook Pro*, these are serious issues. Frank was particularly articulate with his elaborations:

> If you are cycling there is a question of stability... a question about safety – in terms of the... physical traction on the surface... you become much more aware of ground that you are cycling along, changes of direction, braking, anything that might affect the

> performance or stability of the bike...You become very sensitive to surface textures because with the bike, you are literally feeling them through your hands and through your groin... [T]he sensations are transferred into the body and even small changes of surface texture, small seams in the road – seams between one surface and another, anything that causes the bike to jump or move, you become very aware of. (Int24, Frank, 40s, business man (and former architect))

It comes as no surprise then that several *dublinbikers* praised the strikingly high quality of surfaces on the new Grand Canal Cycle route, typified by Joan:

> [I]t was great to have the cycle-lane on the canal cos it's much more comfortable...Less bumpy even... the first time I took the *dublinbikes* they are heavy anyway, but not having cycled a bike like forever, it felt really really heavy – not having to deal with pot-holes... for the first while was good. (Int17, Joan, 30s, academic biochemist)

Continuing with the positive embodied aspects of the experience, Audrey described how her public biking journey was a restful experience for a tired body especially compared to walking:

> I'm on my feet nearly all day and then I walk back – so I'd much prefer to sit on the bicycle. I don't have a sedentary job, as I said I'm moving around all day so I quite like to sit on a bicycle! (Int15, Audrey, 50s, librarian)

While Tom, also focusing on the (big comfortable) saddle, reminded us that they take a bit of getting used to "especially getting the saddle fixed. You forget to tighten the saddle and you'd get half-way across the junction and you hit a bump and your knees are hitting your chin as you are cycling along!" (Int26, Tom, 40s, technician).

Healthy bodies

A small but not insignificant number of *dublinbikers* raised health as either a motivating factor for initially using the bikes or else an issue that they were prompted to think about more in response to using them. While I noted earlier that over 40% of *dublinbikes* trips replace walking trips (Murphy, 2010) and therefore there are few if any (direct) health benefits for those particular trips, other trips are brand new and others still substitute for motorised transport. Dermot explained that he attends lots of meetings around the city:

> So it's handy and just for health-wise as well rather than getting out and taking a taxi.

> Well I've no parking here so it is either a taxi or cycle, so I always try to cycle whenever I can. (Int19, Dermot, 50s, employers' association rep)

While Maureen, in her 60s, highlighted the fitness and physicality she associated with using the bikes: "I think the fitness of it is very useful ... the whole handling [of the heavy bike] thing, how you deal with it, you can't wobble all over the place, you'd get killed" (Int04, Maureen, 60s). Interestingly, according to Brownstone, the doctors at Boston's Medical Centre

> can now prescribe $5 bike memberships to their low-income patients. Once they print out the Prescribe-A-Bike prescription, the patients can either call the city to register, or walk across the street to the Boston University transportation office and sign up right there. A free helmet and key fob arrive a few days later in the patients' mail. (2014)

A further health angle was provided by Patricia who "was diagnosed with epilepsy... and [therefore] no longer could drive". When finally given the go-ahead by her doctor to return to cycling, she discovered that "someone had kicked seven shades of shit", as she colourfully put it, out of her bicycle that was locked outside her door at which point her neighbour "lent me her [*dublinbikes*] card until mine came through [in the post]" (Int28, Patricia, 40s, counsellor). While Patricia's life events leading to become a *dublinbiker* might seem unique, it is worth remembering that there is a wide array of medical conditions which prevent adults, and particularly older adults, from driving[164].

My main argument here is that public bike users appear to be differently aware of their bodies as a result of their public biking experiences than they otherwise would be. They can and do recount experiences not encountered on motorised modes and these even appear to be at least subtly different to experiences on ordinary bicycles. My data suggests that there is some element of awareness-raising of health issues that the bike scheme fosters. I suggest at this point that the public health modelling work carried out by Woodcock et al. (2014) – as discussed in Chapter 2 - could usefully be applied to the Dublin context.

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[164] See for example: KELLY, R., WARKE, T. & STEELE, I. 1999. Medical restrictions to driving: the awareness of patients and doctors. *Postgraduate Medical Journal,* 75, 537-539. On the incidence of epilepsy and related conditions, the meta-analysis of Kotsopoulos et al. revealed that the "median incidence rate of epilepsy and unprovoked seizures was 47.4 and 56 per 100,000, respectively" KOTSOPOULOS, IRENE A. W., VAN MERODE, T., KESSELS, FONS G. H., DE KROM, MARC C. T. F. M. & KNOTTNERUS, J. A. 2002. Systematic Review and Meta-analysis of Incidence Studies of Epilepsy and Unprovoked Seizures. *Epilepsia,* 43, 1402-1409.

6.2.5 The weather, the seasons and nature

I consider here briefly *dublinbikers'* reflections on their experiences of the weather, of the seasons and of nature – and again, my research question has been: do public bikers have distinct experiences of these aspects of life?

The rain, the wind and the cold

Hardly surprisingly, a few of my respondents raised inclement weather conditions as issues which shaped their journey experiences and transport choices.

Two recent migrants were particularly vocal on this. For Miklos, from seemingly sunnier climes, the rain was a real deterrent to using his own (good quality) bicycle for work commutes - and indeed for using the public bike for such trips: "I don't want to leave it for 8 or 9 hours somewhere in the rain... I like my own bicycle and it's too wet for it" (Int13, Miklos, Czech Republic, 30s, IT contractor). Conversely, for Brad there was a distinct advantage to being on two wheels rather than two feet: "in the winter, it is less time out in the cold I think – that's an important one – or out in the rain as well" (Int18, Brad, American, 30s, transport planner).

Ger, on the other hand, hailed from the west coast where "weather is part of your breeding" but he was wary of the "really gusty day" when he would be less inclined or completely disinclined to use the public bikes (Int01, Ger, 20s, student) - again, not a surprising finding. Ian, on the other hand, maintained that it "has to be like a blizzard before I won't hop on it. So the weather isn't that big of an impact. Has to be really bad" (Int07, Ian, 40's, IT consultant). Multiple other factors are at play here of course, such as the availability of alternatives for the particular trips and how far a journey would be to walk. As regards the similarities between walking and cycling while facing the elements, my architect respondent expressed it thus:

> No [they are not similar] - more so because when you are moving at any kind of speed... anything faster than walking pace, then you are aware that the rain is hitting you faster and the wind is hitting you faster. If you are cycling there is a question of stability as well; there is a question about safety – in terms of the surfaces you are cycling on... the physical traction on the surface. (Int24, Frank, 40s, business man (and former architect))

Seasonal journeying

Unsurprisingly many (north west European) public bike schemes have lower usage in the winter months compared to summer (O'Brien et al., 2014), so one consequence appears to be that there are more bicycles available – as Joanne explained:

> Well there was no bikes this morning. But yesterday – well it's funny because in the summer I love getting them cos it's nice out! But in the winter, actually I've noticed that there is usually more bikes in the morning. (Int27, Joanne, 30s, college administrator)

It also appears to be case – again unsurprisingly – that the change of the seasons and the longer, brighter, evenings prompt some to grab some fresh air and indulge in lazier leisure journeys, as Alan explained:

> [With the] evenings... getting longer and suddenly you have this extra hour that you didn't have before and I actually had to go home, and get my camera and come back [along the canal] and I got on a *dublinbike* taking pictures cos it was so nice cos there is the bike corridor as well... (Int14, Alan, 20s, PG student)

This example links to earlier discussions on completely new journeys - rather than all DB journeys simply being a substitution from another mode.

Micro-climates,urban nature and stately paces

Finally, a small number of respondents touched on their experiences of nature in the city on the public bikes.

Frank maintained that a distinct difference between walking and public biking was that those on foot had the easy option of diverting into parks - to distance themselves from bus fumes for example, and this enabled them to experience the arboreal micro-climates:

> If you were walking around Stephen's Green... you would be much more aware of the micro-climate... so even the area along [those squares]... where people put paintings on the railings would have their own micro-climate because of the trees overhang and give a certain amount of shelter. You don't experience that on the road on the bicycle. (Int24, Frank, 40s, business man (and former architect))

While the *dublinbiker* can, of course, hop off the bike to walk through these parks and experience nature as the walker can, some simply enjoy pedalling past and observing the flora:

> I like Merrion Square – this time of season. I really like the magnolias in the National gallery – in front of the entrance to the National Gallery... the white ones. (Int12, Pawel, Polish, 30s, legal secretary)

Further, as argued earlier, the seeking out of (empty) bike stations seems to encourage some *dublinbikers* to take additionally circuitous and meandering journeys which sometimes bring them into closer contact with nature. And what largely differentiates those journeys from motorised ones is, as Demerath and Levinger express it, the 'pausability' of this type of travel (a concept I revisit in section 6.4 below). And even between pauses, both *dublinbiker* and pedestrian are at a more suitable pace to experience "the medium-scale environment.... designed as they are for our naturally evolved physical state" (2003: 227). This argument is all the more pertinent for public bikers – as against other cyclists - since, as Greg, put it:

> The *dublinbikes*, you can't but be stately on them... They will not go fast - the 'sit-up-and-beg' kind-of thing[165]. You know you make a stately progression through the city streets...[as opposed to] my fast bike [where]... you have to be in a particular mood to drive it. (Int32, Greg, Irish, 50's, Film Producer)

6.3 Emotional journeys and navigating through the city

6.3.1 Emotional journeys

In Chapter 3 I argued that mobilities scholars have turned a critical eye to the emotional dimensions of travel over the last decade or so[166], while these have of course been an essential part of 'road trip' literatures and film genres for much longer (e.g. Thompson, 2003). In the pages below, I prise open the emotional experiences of being a *dublinbiker*.

As an initial aside though, I note that even before the *dublinbikes* became available, there was an emotional reaction at the street level. Most respondents living close to stations felt apprehension and disbelief that the concept would succeed. Patricia "was a bit suspicious...thinking 'are we going to have people blocking [the road]'" and she acknowledged that her thoughts did not "even make any logical sense" (Int28, Patricia, 40s, counsellor), while Pete was sure that "Dublin's finest would actually pull them out of their holsters and they'd be gone" (Int29, Pete, 40s, comedian). Some others were excited though, having seen them abroad.

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[165] Note that the design of the *dublinbike* is of the 'sit-up-and-beg' type which is similar to the traditional Dutch bike (and indeed traditional Irish bike) but is (or, at least, has been until very recently) more uncommon in Ireland now.

[166] See in particular Chapter 3 of: URRY, J. 2000. *Sociology Beyond Societies - Mobilities for the Twenty-First Century*, Routledge.

Joy, freedom and relaxation

For many or even most respondents, the 'free and easy' ways of moving about, as discussed in Chapter 5, fostered feelings of joy, pleasure and relaxation at least some of the time.

Maureen explained that "the outstanding feeling" for her was "the freedom of it – and just learning how to deal with traffic" (Int04, Maureen, 60s), while Brad pointed out that "it is more fun to be on a bike than it is to be on your own two feet" (Int18, Brad, American, 30s, transport planner) - his comment reminding us that many *dublinbikes* trips are substitutes for walking trips[167]. Ian was more dramatic, expressing the excitement of being a first-time user as akin to that of an illicit rush: "you felt like you had stolen a bike – you were riding someone else's bike" (Int07, Ian, 40's, IT consultant). In a sense then, *dublinbikers'* excited feelings evoke those of riding a bike for the first time, or of the bike-messenger's "exhilaration of being hyper-alert" as they race through a busy city (Spinney, 2007: 39) or indeed of the manifold pleasures of car driving. While some of these feelings are common to riding an ordinary bicycle, some - such as the feeling of having "stolen a bike" – are not. An important point here though is that some *dublinbikers* (such as Ian) live in satellite towns or outer suburbs - and some have never cycled in the city before as adults, so being able to commute by public transport *and then experience (peak-hour or lunchtime) urban biking* enables them to feel specific emotions which they would otherwise miss[168].

A small number of respondents directly compared feelings associated with public biking with those of bus travel, typified by Richard who used to cycle to work "up to about 25 years ago":

> [Public biking is] physically pleasurable, it's nice to be in control... maybe explore somewhere along the way... By contrast the bus is a very unpleasant experience... there is totally no indication of how long you have to wait and they tend to hunt in packs so typically you see six going and then you have to wait 10 or 15 minutes for the next one... and they're crowded and oppressive and not pleasant and don't bring you exactly where you want to go – and you have to pay... for me it is just the sheer pleasure of cycling as against the boringness of walking and the unpleasantness of being on a bus. (Int03, Richard, 50s, statistician)

Some others contrasted public bike journeys with car journeys:

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[167] As discussed earlier (Chapter 5).

[168] This argument also applies to feeling more negative emotions (as discussed later) but, presumably, if such emotions are felt to be really terrible, the person will discontinue cycling!

> I probably use my car just as much as I use my bike. Like today I have the car... I much prefer the bike I have to say. If I had my way, the bike is a much more pleasant way to travel. Obviously the rain is a disaster. But there is nothing we can do about that. (Int22, Paul, 40s, engineer)

While his descriptor 'pleasant' does not convey very much, the tone of the interview leads me to think that it is tied in with a feeling of freedom. Relaxation was mentioned by some *dublinbikers*, with Sandra drawing comparisons with feelings of being on foot:

> [Y]ou can relax more on a bike – you can kind-of float past things... particularly when you don't have to pedal... sometimes when you are walking, you are almost in a rush... because you have to get there quicker. I'm usually in a rush... on the week days. On a bike you know you are going quite quickly and effectively so you can kind-of enjoy your surroundings I think *more* than when you are walking... It's just freer, so when you go past the National Concert Hall it is lovely and around Merrion Square.... it's just really relaxing... you notice periods when it is very congested and quite manic and then it smooth[en]s out and it's very nice when the cars aren't there... [such as] along the canal... it is really pretty and there are cars there but there is a proper bike lane there... You can just see the ducks having fun in the canal and it is really lovely. (Int08, Sandra, English, 30ish)

As argued above, the feelings she describes are not necessarily specific to *public* biking as against riding her own bike (but noting that she picked up the *dublinbike* close to the "really lovely" canal route) but, again, as a daily rail commuter into the city, these were fresh experiences for her. My main argument here though is that freedom is not merely a dispassionate response to the perceived efficiency of the system, it is very much a sometimes quite intense feeling of being unoppressed - through avoiding packed buses, and unchained from expensive-to-buy, to fuel and to park automobiles.

Frustration

It is not all roses though and feelings of frustration were raised by a majority of my respondents, particularly in the context of the imbalances between the supply and demand of bikes as discussed earlier:

> The most frustrating thing... is that you go to a bike stand and there is no bike. So today I was at Portobello, went to the bike stand [and]... there was no bikes, went to the bike

> stand down the canal there was no bikes, so then I went down [and] three buses came... and I was too far away to catch [them]. I came down to Grantham Street and one bike left – so I took that... [but] when I came down to the stand then on Wicklow Street, it was full so I had to wait there for somebody to take a bike [so I could dock my one]... That would be very familiar to me. No bikes and I either walk... or get the bus depending how pushed I would be (Int04, Maureen, 60s)

Of course these feelings mirror the exasperations felt when trapped in traffic jams and another of my respondents spoke about being caught in congestion, not while *public-biking* but while on the bus: "Yes, that's very frustrating. Stuck and you are thinking, will I get off and walk?"(Int10, Peter, English, 50's, union employee). The most extreme expression of such frustration is road rage which, according to Lupton, has emerged because of a constellation of factors such as that people feel "the ties of sociality have broken down" and because of "the vulnerability of our bodies" and as a result of "other car/drivers invad[ing] our space" (1999: 70). While none of my respondents recounted any incidences of road rage, feelings of vulnerability were never far from descriptions of sharing narrow pot-holed roads with buses towering over them – a topic I revisit later in this chapter.

Confidence – and behavioural shifts

Riding a bike in a busy urban environment is very much a skill or a craft (Franklin, 2007). Since developing and mastering a new skill is often associated with then gaining confidence, it seems unsurprising that some respondents reported that the *dublinbikes* gave them "the confidence to cycle in the city" (Int05, Selina, 20s, marketing person). This was very much the case with those for whom the public bike was their first adult urban cycling experience. For others, such as Joan, as their confidence grew the routes they took changed:

> It was a great way to start to just have the cycle lane there on the canal, where I didn't have the cars right there beside me – but it is longer – but as I say just now, I have more confidence on the bike and in traffic, I take the roads. (Int17, Joan, 30s, academic biochemist)

One broader argument I am feeding into here is that changes in (mobility) habits are complex processes: the provision of new technologies, in this case in the form of sturdy well-maintained public bikes for which storage is someone else's responsibility, provides opportunities for people to experiment with new behaviours. This is facilitated further (for some) by other technologies or infrastructures, in this case by a new traffic-free cycle route in the city; and then, in turn, public

bikers' confidences grow with the use of the technology (just as Freund and Martin's argue in relation to driving at high speed and manoeuvring traffic (2009: 479)); and further, for some, purchases of new bikes are made, supported in some cases as Caulfield and Leahy (2011) have shown by other economic incentives and policy measures. In other words, there is 'a web of causation' as the epidemiologists refer to it (Krieger, 1994).

Social Safety

One of my respondents, a young woman living in the north east inner city and close to some of the city's more disadvantaged areas, felt that bicycling made traversing places safer in the social sense:

> [D] And how do you find them [the DB's] at night-time? Are there plenty of other cyclists about?
>
> No, not as many. I would only do that if I was with somebody because it is a little unsafe around Mountjoy Square at night, when it's late. Only if I'm with someone do I park there... I actually feel more safe on the bike. I mean I would never walk that way home but I would cycle it. I don't know why, I just think... Say it was 9 at night, I would never walk but I'd cycle.
>
> [D] So you'd feel less vulnerable?
>
> Yes, even though there are less bikes around... if there is a group of people [loitering] you just cycle past them, you are not walking by them.

The paradox here is that while normally women (in particular) use public transport less when there is a perception of being socially unsafe (Schmucki, 2012), in this case it is the opposite: the public transport – in the form of the public bikes – is used as a preference to walking. The phenomenon of feeling less exposed to (some of) the perceived dangers of the street compared to being on foot is another aspect of freedom which has obvious parallels with being 'carcooned' and relates back to discussions in the last chapter.

A spectrum of alertness

Amongst many, if not most, of my interviewees – and in spite of earlier talk of 'being relaxed' - what distinguished their states of consciousness while public biking from other ways of moving about was the alertness they associated with the public biking. Unsurprisingly it was, firstly, those from more cycle friendly Continental cities and, secondly, those who were returning to city cycling after (sometimes) long breaks who raised this issue most forcefully:

> You have to watch the traffic, especially cab drivers and buses are quite ruthless, so I'd say... you are in an alert state when you cycle in Dublin" (Int09, Jurgen, German, 20s, PG student)

> [O]ne of the anxieties... as someone who is not used to cycling around the city for quite some time, is cycling around with very large buses moving and changing lanes around [you]. And trying to manoeuvre across lanes when you might be slightly unsteady on the bike, or not completely comfortable with how the bike will react to movement or to changes of direction... In terms of the pure physical size of the bus... you are up against a vertical presence... So with a car... If needs be, you can bang a window for someone's attention... And when you are cycling through in lanes of traffic, you can get squeezed between two vehicles – it is quite intimidating. (Int24, Frank, 40s, business man (and former architect))

My argument here is not that the intimidation and states of fear that my public biking respondents regularly feel is likely to be substantially different from that felt by other cyclists more generally in Dublin (on this more general experience see Lawson et al., 2013b), my argument is that feelings of anxiousness or intimidation while journeying appear to be an almost taken-for-granted and unquestioned aspect of cycling in a city. It is seen as unremarkable. If, on the other hand, journeys on buses or trains were prompting such feelings, one wonders if there would be a different reaction, publicly and politically.

Intriguingly, it may be the case that it is the high state of alertness on the bike, shaped to a great extent by the auto-centric city environment, that enables cyclists and *dublinbikers* to have a heightened multi-sensory experience and "heightened awareness of what is happening" (Int24, Frank, 40s, business man (and former architect)) in other realms, as described earlier. In other words, the enhanced array of sensory stimuli triggered in *dublinbikers* arises from the need to be extra-attentive and vigilant when sharing spaces with, for example, buses and taxis, and to be alert to the possibility of pedestrians wandering across one's path:

> I think you have to be more conscious when you are on the bike because you are looking out for the cars who aren't paying attention and people [pedestrians] who aren't paying attention.... Like when I'm coming up to lights, I have a feeling they are going to walk out in front of me, you know? (Int27, Joanne, 30s, college administrator)

Furthermore this heightened state may also encompass a greater propensity to feel surprise, as described quite eloquently by Frank:

> Well you are more likely to be surprised – so the experience of surprise can be greater [on a bike compared to walking]. You know... you suddenly come around a corner and there is something there that will surprise you – either the way the sun is shining into an open area or shining between buildings and because of the fleetness with which you experience these things, they can be quite impactful. So yes, the possibility of being surprised is much greater because of the speed with which your environment is changing all of the time. (Int24, Frank, 40s, business man (and former architect))

Feeling the traffic

My comments on 'alertness' above lead us – or, at least, could lead us – into delving deeply into the multi-faceted and multi-modal regimes of the traffic environment in Dublin city as experienced by my public biking respondents. I define (the seemingly simple term) 'traffic environment' broadly here[169] by drawing on my respondents' feedback to include the following elements: large moving objects (trams, buses, heavy goods vehicles, cars, taxis); slightly smaller moving objects (motorbikes and bicycles (both privately owned and public)); infrastructures (road intersections, road links (of various types – multi-lane links, bus-lanes, cycle-lanes, cycle-tracks, cycle-ways and discontinuities of same), traffic signalling infrastructures etc.); regulations (on speed limits, access to bus lanes, car parking controls, driving standards[170] and the (non-) enforcement of same by traffic authorities etc.); and people and practices (drivers of all of the above vehicles, the skills of all drivers, behaviours and temperaments of all drivers and pedestrians - including over-taking practices, propensities to speed, their competition for space, interactions with each other etc.).

It is therefore a messy, multi-pronged concept and it was the dynamic interplay of all of these elements which shaped to a significant degree the journey experiences of my respondents. As Taylor puts it, "our experience of traffic is... multisensory, kinaesthetic and vicarious" (2003: 1616). I illustrate the interplay of all of these elements with one quotation from Danny:

> Well, I would get [the *dublinbike*] at the Four Courts... when you get to the quays... you are moving across lanes of traffic so there is an element of confidence in doing that.

[169] But not as broadly, for example, as the 'system of automobility' URRY, J. 2004. The 'System' of Automobility. *Theory, Culture and Society,* 21, 25-39.

[170] As per the Rules of the Road: ROAD SAFETY AUTHORITY 2013. Rules of the Road (Revision No 4: December 2013). Dublin: The O'Brien Press Ltd.

> Likewise, coming on to Dame Street, again a fair bit of traffic... I'd come through Dublin Castle which is quiet.... [I]n the opposite direction I wouldn't take the same trip... [and] if I obey the rules of the road, there is every chance that the person driving the car isn't so you need to be a little bit wary as well... Because there are a couple of left turns there where bicycle lanes are - there are two lanes of traffic, a bicycle lane and a filter lane... so you just need to see what's happening ahead of you and suss what this person will do.... (Int20, Danny, 30s, public servant)

Rather than attempting to analyse the breadth of my respondents' experiences with this multi-faceted concept - each with their own peculiar cycling histories, cycling skillsets and sets of routes cycled – instead, I propose to focus on one issue: navigating the city. What do my respondents' navigations through the city on the public bikes tell us? This I explore in the next section.

6.3.2 Navigations and realisations

One-way streets

What many respondents highlighted was the difficulty in navigating through parts of the city arising from negotiating one way street systems. Paul's comment below, typical of many, relates to the perceived inequity of (public) bicycle users needing to draw on human energy to cover circuitous routes designed *for* (and probably *by*) those using carbon energy to move about:

> Another thing is that it is not fair to get them [cyclists] to do this car route around the Green – you know it's not going to happen either. So you have the likes of [radio presenter] George Hook who go crazy about cyclists going down one way streets but you can't expect them to cycle the whole lap of Stephen's Green to get from A to B which is designed for a car... I would have a great amount of sympathy for cyclists...Even though I drive just as much. (Int22, Paul, 40s, engineer)

Again, typical of several comments, Danny's heightened awareness of the one way system prompted these thoughts:

> [O]bviously the one-way becomes an issue... there are times where you know that it is probably all right if you do not necessarily follow [the rules] to the letter. But..you [generally] do for your own safety... If you are a person who doesn't drive in town, it becomes an issue at places where you took for granted you could go... That's the main difference [between cycling and walking] I think. (Int20, Danny, 30s, public servant)

Both the first respondent, a new adult cyclist in the city and a driver, and the second, a *dublinbiker* who does not drive in the city, arrive at the same conclusion on the cycle unfriendliness of the system. Furthermore, the latter comment suggests that some are beginning to think it is "all right" not to follow every traffic law. A further response to experiencing the system is to suggest changes:

> [N]ot enough of the streets are open up to bicycle traffic in the opposite direction to the [motorised] traffic. So... we should have more of that where bikes can go [the other way]. (Int06, Seánín, 50s, tour guide)

What appears to be happening is that *dublinbikers* are becoming conscious of the implications of car centred road layouts - now widely acknowledged as an inconvenience for urban cycling - see Department of Transport (2009b) and Sustrans (2014). These above qualitative descriptions build on the work of Peppard (2004) who quantified detour distances associated with Dublin's one-way streets. Furthermore, these experiences are prompting users to start re-imagining how the streets could be reconfigured.

Traffic light mania

Paul raised a further dimension of extreme traffic engineering

> Yes, it would be nice... if you could avoid being pushed into where the cars go. I remember when I used to work in Dame Court... to cycle to Tara Street, you had to go through about 8 sets of lights – which is only about a mile.... It's a lot! (Int 22, Paul, Irish, 25-44 years, Engineer)

It appears then that public bikers are becoming aware of what other cyclists have knowledge of already: that increasing the number of stopping points raises *significantly* the energy expended in moving[171].

[171] Parkin and Rotherham (PARKIN, J. & ROTHERAM, J. 2010. Design speeds and acceleration characteristics of bicycle traffic for use in planning, design and appraisal. *Transport Policy,* 17, 335-341.) discuss the additional effort required to cycle after a stop, and they state that Mercat (MERCAT, N. Modelling of bicycle journeys: using energy expended rather than journey time or distance Velo-city, the 11th International Bicycle Planning Conference (13–16 April 1999), 1999 Graz, Austria.) "notes that, based on an average energy use of 100 W, the energy required to get back up to speed is equivalent to riding 139m at constant speed and this is longer than Graham's estimate of 55 m".

My overall argument here is that the importance of the above issues - one-way streets and traffic light frequency - just two examples of many traffic issues that emerged in the research, relates to understanding the processes by which citizens' views on matters of public policy in the transport realms may shift. It is known from Murphy and Usher's study that "68.4% of respondents claimed not to have cycled for their current trip prior to the launch of the dublinbikes scheme" (2013: 15) and official data indicates that there now "[o]ver 42,000 long term subscribers" (J.C. Decaux and Dublin City Council, 2014a) to the public bike scheme. While it is unclear what percentage of subscribers do not use their *dublinbikes* cards and (hence) bikes, I make an assumption that it is 10% of annual subscribers[172]. On this basis, there are over 25,000 persons[173] having new experiences of being an urban cyclist on trips previously taken by other modes and, for many of them, it seems very likely based on my qualitative work to include a new realisation that city streets have not been configured for easy movement of bicycles[174].

One policy consequence is that a wider consciousness of how streets are currently designed – and how they might otherwise be reconfigured from a bicycle user's perspective – may enhance the acceptability amongst a larger population of traffic management measures aimed at making the city more bicycle-friendly (and/or more car-unfriendly). Conversely, it is argued here that without this new awareness, such measures would be more unpalatable to the public. The demographic profile of *dublinbikes* users could also play an important role. Fishman et al. (2013) showed that the middle classes are over-represented amongst public bike users at a global level and this is consistent with the findings of Murphy and Usher (2013) for the *dublinbikes* scheme and my own findings. Since the more middle class areas (in Dublin) have higher voter turn-out rates in elections than more working class areas (Kavanagh, 2012) and since the middle classes are likely to include those professionals working in the realm of transport planning – this suggests that one may expect policy (and road design) changes supportive of cycling to advance more rapidly than they otherwise would as a result of the large number of new (public bike) cyclists in the city. This is an argument that ties in with my examination of the 'systems effects' of introducing the new socio-technical system – Chapter 7.

[172] This is a difficult estimate to make. There does not appear to be any precedents on which one can base the estimate. My reasoning is that if people go to the trouble of subscribing for a card, then most of them would seem likely to use the bikes at least occasionally.

[173] I.e. 42,000*0.9*0.684 = 25,855

[174] To put this figure in context, Census 2011 indicates that there were 26,670 persons living in Dublin (City and County) who use the bike as their main means of travel to work. See Table 3, page 39 of CENTRAL STATISTICS OFFICE 2012a. Census 2011 Profile 10 Door to Door – Commuting in Ireland: Statistical Tables and Appendices. Dublin, Ireland: Stationery Office..

6.4 Social and sociable experiences?

As discussed earlier, my principal hypotheses upon commencing my research were, firstly, that urban bicycle users had many unplanned (pleasant) random encounters with both cyclists and pedestrians on the street (and more than those who journeyed by other modes) and, secondly, that resulting from these interactions there was a strengthening of social cohesion amongst urban cyclists. I set out to test these hypotheses through using the *dublinbikes* 'experiment' as the focus of my case study. In section 6.4 here, I discuss my findings relating to the social, sociable and – as we will see – un/non-sociable experiences of the journey.

6.4.1 Being spotted by, spotting and cycling with acquaintances

My findings, presented below, suggest that public bikers are quite public figures in that they are more easily spottable by friends and acquaintances on the street than are other road users, such as pedestrians, car occupants or bus passengers – and possibly also even more so than other (non-public-biking) cyclists. While it is unclear if it might be easier to spot those with whom one is already acquainted (whatever their mode) while cycling as against travelling by other modes, it is definitely easier to stop and chat having seen them as a public biker compared to all motorised modes.

Being spotted

Several of my respondents commented on being 'spotted' while journeying in the city. While Joanne recounted that "[p]eople have seen me! Like a couple of people have been driving along and beeped or whatever" (Int27, Joanne, 30s, college administrator), Maureen explained that she was "cycling down Georges Street yesterday and I heard my name shouted out and [it was] a friend of mine... across the street... and he was waving and I just shouted over at him but I was gone by so fast... but that was nice" (Int04, Maureen, 60s). Richard elaborated a little more:

> A couple of times I've been spotted, I'm not so good at observing people – although a couple of times I have, now that you mentioned it, bumped into people – one guy I bumped into who I had[n't] seen since years ago I just bumped into and cycled along [with him] for a while – and some of my colleagues have spotted me out and I haven't spotted them, so there's a bit of that but not that much interaction is the case. (Int03, Richard, 50s, statistician)

Public bikers may be more easily spottable for a number of reasons: firstly, because of their more upright posture and hence height (compared to 'ordinary cyclists') in amongst the rest of the

traffic; or secondly, more spottable in the ways that flâneurs (on bikes) are – gentlemen strollers of city streets (Cf. Oddy's "The Flaneur on Wheels" in Rosen et al., 2007: 97-112).

Spotting others and stopping for chats

Several of my respondents also commented on spotting people they knew, with Lulia explaining that she has "a friend in a wheel chair... and I used to bump into her and do a quick hello! Sometimes we would stop and talk but more often we are on our way off to somewhere" (Int23, Lulia, 20s, graphic designer). Danny elaborated a little more on the ease of stopping for chats while out on the bike

> You see people you know and you might stop for that reason... The bike thing, it is much easier just on the bike to talk to someone than to stop a car, so I suppose it is sociable if you see somebody in that respect that you know. (Int20, Danny, 30s, public servant)

This is a crucial point and builds directly on the theories of Demareth and Levinger on the pausability of being a pedestrian (2003: 230): the slightly more public and prominent position of the *dublinbiker* may enable users to be spotted by and spot friends as they cycle about – and then it is quite easy to stop and be sociable.

A related point is that strangers on public bikes may become a little more familiar on regularly used routes as Mary, who uses the *dublinbikes* as part of her multi-modal commute, explained:

> I do see people that are becoming familiar on that stretch... But this morning I just happened to pass a guy – and thinking, because there was no bikes there [in the docking station] this morning... now, 'will I go up [and ask him for the bike]' cos I knew he was going to leave his there because I reckoned by the time I would get back there would probably be a queue so I left it. (Int16, Mary, 50s, banking employee)

As this further example suggests though, this very same process of becoming increasingly familiar to strangers happens on regular train journeys:

> Well I suppose I did actually cycle by a guy I work with the other day and just said hello. You'd bump into people who you'd know off the train who were getting them [the DB's] as well, so you'd see them that way. You obviously sometimes have a few words with people while you are waiting, queuing for the machines maybe like that you know. (Int07, Ian, 40's, IT consultant)

These latter points are examples of the 'weak ties' that Jacobs (1962) describes in a neighbourhood context. That is, one is more likely to ask someone who 'you know to see' for a small favour than someone completely unknown.

Cycling together

Interestingly, only a small number of my respondents mentioned public biking experiences with companions, a mobile practice that would seem to bemore common-place for car drivers and passengers (see for example Laurier et al., 2008) – and indeed for cyclists in some other countries (Horton and Parkin, 2012)[175]. Fionn, whose workplace was very close to DB stations, discussed it in a work-related context:

> [I]f myself and Glenn[176] had to go to a meeting... on Merrion Square – and again – if something had to be carried over, I'd use a *dublinbike* rather than my own bike because of the basket. And if I didn't have my bike – I don't cycle in every day, somedays I walk in, somedays I drive in – so if my bike isn't there, we'll always go to meetings on a [dublin]bike, always. (Int30, Fionn, 30s, digital media SME person)

And Amanda, who lived in the neighbourhood close to several docking stations, described her evening socialising trips

> Our...gang... if we were all going out in town – and I remember we were all going to a black-tie do one time in town and we all went out in our gúnas and gowns, it just made sense. You know, we'll Dublin Bike in and we'll taxi home (Int33, Amanda, 40s, PG student / advertising background)

While these examples also serve to illustrate the points that those living within the city have multiple mobile options and the public bikes give them even more flexibility (as argued in the previous chapter), my argument in this case is that *solitary journeys* on public bikes seem to be the norm - *and not* cycling along with a friend or friends.

[175] They argue, while discussing cycling unfriendly environments, that it is "unreasonable that a family can travel and talk together by car, but not by cycle, despite cycling being the more sustainable option". Page 319 of HORTON, D. & PARKIN, J. 2012. Chapter 12 Conclusion: Towards a Revolution in Cycling. *In:* ROSEN, P., COX, P. & HORTON, D. (eds.) *Cycling and Sustainability.* Emerald.

[176] Also a pseudonym!

Public bike rendezvous

The uncontested social aspect of public biking relates to making meeting-up much more convenient, and especially so in a city of a size that makes walking a bit of a stretch and taxi-ing a little annoying and expensive. Ian's comments typify many respondents' comments:

> [O]ne of the great things I find about them... I can now meet people for lunch all over Dublin.... maybe once every week, two weeks, I'll like say to an old mate 'I'll meet ya' and he'll say, 'oh, you know I'm working up on Camden Street'. 'Ah that's no problem, where is the nearest *dublinbike* [station]?' And I'm there in ten minutes. Whereas I couldn't meet him for lunch otherwise.... It opens up the whole city to you... Plus if you are meeting people for a drink after work you can jump on the *dublinbike* and say, 'yeah I don't mind, I'll meet you over in the Brazen Head or wherever... as long as there is a [station] nearby I'm good you know'.. Maybe five minutes and you're over the far side of the centre of the city. (Int07, Ian, 40's, IT consultant)

There is a sense here of course that these *dublinbikers* – with some making these comments living outside of Dublin but commuting in by rail – are 'discovering' the freedoms and flexibilities that 'ordinary cyclists' have felt for years.

6.4.2 Social interactions with unacquainted others

In terms of what might be called sociable interactions with random members of the public – or "unacquainted others" as Wilson describes them in his study of bus passengers (2011: 634), I was particularly keen to understand how the *dublinbikes* journeys fared against other modes. My data analysis suggested two distinct realms of enquiry: encounters at docking stations and, as touched on above, encounters on the move. I deal with each in turn before segueing into a discussion on the nature of community.

Docking station exchanges

Quite a few of my respondents engage in some 'small talk' at the bicycle stands. The talk appears to occur in two distinct types of situations. Firstly, it happens when tourists (or new users of *dublinbikes*) are seeking help when negotiating the (sometimes user-unfriendly) interface, or else when they are simply curious about something new - as Richard pointed out:

> [T]he odd chit chat I'd get might typically be at the use of the bikes themselves – when taking a bike, a tourist might say how does this work or some aul' fella chatting to me. (Int03, Richard, 50s, statistician)

The questioning by tourists or 'newbie' *dublinbikers* - "[t]hey ask questions a lot around the machine about how do you get [your *dublinbikes* card]" (Int22, Paul, 40s, engineer) –would appear to mirror closely the experiences in Paris, so much so that one of *Vélib's 10 Commandments* reads "5 - Help out tourists and new users"[177] (Mairie de Paris, 2014a). The formality of the term 'commandment' suggests that small talk has been institutionalised!

Secondly, some interactions are happening when users are queuing at empty docking stations waiting for bikes to return or when hanging around at full stations with a bike waiting for a free space to appear. This is, as Fionn put it, a "little bit like when the smoking ban came in – you ended up talking to random smokers outside a pub" (Int30, Fionn, 30s, digital media SME person).

Alan maintained that "there is a friendliness to [these chats] – like if you come to a station [on your *dublinbike*] and... it is full and someone arrives just behind you to wait and [says] 'I've just had a look there at such-an-such a station, does that help you' kind of thing? (Int14, Alan, 20s, PG student). A similar scenario, described by Maurice, is when "I would be leaving the bike off at a stop where... there was no bikes... and someone was waiting [and says] 'Oh thank god you came along.. I was just about to head on to the next station'... So it would be very casual in that regard."(Int21, Maurice, 30s, software programmer). Frank sought to explain - in very functional terms - why he felt therewas practically no meaningful interactions at stations:

> I know people tend to stand back or wait until someone has carried out a transaction.....
> [D] Like an ATM queue or something?
> Yes.... And the reason why is, the individual has to complete a transaction in that you bring the bike to a docking station, you just lock it... in order to cut off your financial responsibility... so there is no need for anyone to actually help anyone else at a docking station because I've got to complete the transaction. (Int24, Frank, 40s, business man (and former architect))

The interactions – or rather the lack of them – between *dublinbikers* were akin to those in ATM queues. The interaction is merely with the machine – the virtual financial infrastructure, the new

[177] It reads in full:
"You can give two types of help:

- Explanations of the service, such as how to subscribe, the best way to use the service (maximum 30 minute trips etc...)

Buy a 1 or 7 day ticket online or using your smartphone

- Troubleshooting: Sometimes when the light goes red, people don't know what to do, but now that you've read point 3, you have no excuses!

Vélib' stations function in 5 languages."

network of the city. Finally, on rarer occasions though, there are lengthier and more memorable interactions, as Maureen recounted:

> Well once with the bikes there was a guy who couldn't drop his bike and neither could I... and we walked from Wicklow Street to Dame Street [i.e. from one docking station to another] and he was *so excited* about the bikes and unfortunately I was late for a hair appointment but I would have stood talking to him – he was a *really nice guy*... and he was talking about being in other cities where they had their own bikes... how he enjoyed using the bikes – he doesn't live in the city but he comes up from the country but when he's here he said he would always use a bike – so, but that's one incident out of all the years that I have, you know – I find people generally taking the bikes are polite, you know – I think it is probably a middle class thing because they have credit cards to use them, you know you don't get people taking a bike to smash it up (Int04, Maureen, 60s)

Interestingly, Maureen's comments touched on several of the themes I discussed earlier – the joy of using the bikes, the use of *dublinbikes* by those who had been public-biking abroad, their use by people living outside of Dublin, the class issue and (relatedly in her eyes) vandalism.

Interactions on the move – non-existent, friendly or cranky?

In regards to casual interactions while on the move, most of my respondents did not recount any sociable interactions *with unacquainted others*. For Maureen, such interactions were minimal: "from my own personal experience that it's very minimal – you are still just a face – in the city... You know sometimes you think you have a sign on your forehead which says, stay away! <loud hearty laugh>" (Int04, Maureen, 60s). While for Joan, linking with the findings above:

> The only times I would have interactions is the odd time at Harcourt Terrace – there is no bikes and I'll wait a minute or two and if someone drops one off I'll say hello [and] thank them and that. But when I'm on the bikes, no. (Int17, Joan, 30s, academic biochemist)

Tom disagreed somewhat, maintaining that *dublinbikes* were a bit of a conversation piece – at least for himself! "So if I've stopped at the lights alongside a super-dooper fixie[178], [I'd say] 'you should try one of these for a change'! They are a bit of a talking point I guess!" (Int26, Tom, 40s, technician).

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[178] A 'fixie' is particular type of single-speed bicycle (with a 'fixed' wheel – i.e. the opposite of a 'free-wheel') which is currently quite popular among certain groups, particularly urban bicycle messengers. See Chapter 6 ('DIY Bike Culture') of Furness' work for a discussion around the meanings of 'fixies': FURNESS, Z. 2010. *One Less Car: Bicycling and the Politics of Automobility,* Philadelphia Temple University Press.

Another respondent, Claire, did not appear to have those one to one conversations but she felt the scheme brought more "life around the canal..... [and] in some ways, [this was] a throw-back to a really old concept - the canals as a thoroughfare" (Int34, Claire, film producer, 30s).

Overall though, the question that floats to the surface for me here – particularly in the context of the expectations I had on commencing my study – is why are there so few interactions amongst *dublinbikers* or between *dublinbikers* and other cyclists? It cannot be the case, as Urry posits for car travel, that "to inhabit the roads of the west is to enter of world of anonymized machines, ghostly presences moving too fast to know directly or especially to see through the eye" (Urry, 2006: 21). Some public bikers do mention speed, but it is the slower pace of *dublinbikers* relative to othersthat annoys "the hardened cyclists a bit!" (Int17, Joan, 30s, academic biochemist). Annoyance is also felt by the *dublinbikers* who are also experienced cyclists, such as Maurice, who hated seeing *dublinbikers* flying through red lights "so I make a point of stopping them which does annoy people – so I've had conversations in that regard, like [them saying to me] 'would you mind getting out of the way' – [and I reply] 'no I won't [get out of your way]'" (Int21, Maurice, 30s, software programmer). These are very much, some of the tensions felt between Aldred's 'proper cyclists' and 'bad cyclists' (2012c).

For one more senior respondent, the general absence of sociable experiences on public bikes struck a chord with them since the experience aligned with their thoughts (along the lines of Simmel's (in Frisby, 1997)) on the unfriendly nature of cities:

> one of the things about the city... is that it is so difficult to meet people. I mean it is so contradictory, you are in a place where there are the most people – and I live in between here and Achill island, I would actually meet more people on Achill where there are is only a tiny fraction of the population [of] Dublin.... I think it's a trust thing... But when you are alone – as I am – mostly, generally, it is something you think about quite a bit and I would be a country person so I wouldn't be used to that... but I often think about it. (Int04, Maureen, 60s)

For others, the non-sociablility of streets seems to be a feature of modern life in Dublin:

> I think [the lack of street chats] that's a feature of modern life in Dublin – I mean my late mother... on her trips into town to pay her bills or whatever with the bus pass, she was always talking to people, particularly of her own age group... She'd come back and say, oh I met this woman on the bus or... this man at the bus stop... [T]hat was a core element of

Dublin, but nowadays... if you tried to strike up a random conversation, you're seen as a randomer which doesn't have a kind-of a good caché in... society any more. And yet... when people do have them, they feel the benefit of it...

[D] if you approach someone on a bike, do you think it is more or less threatening [than by other modes]?

I would say less cos you are sharing that journey, you know... I must do it more often.... Whereas... [with my] mother... on a bus and they might continue on, they'd sit beside each other on the bus - and the life story would come out. When you're at the [DB docking] stand, I mean there is two people, just avoiding contact with each other, conversationally or eye contact, when you know an immediate topic of conversation – Jaysus you're never gonna get a space on this stand or something like that you know...

I think now people get their information off the internet or their smart phone, and they don't feel the need to actually ask a question... which is, kind-of sad really....(Int06, Seánín, 50s, tour guide)

Seánín's position – that non-interactions are not the preserve of public bikers - was echoed by Peter:

[I] I think on the bus – I don't take the bus that often – I think everyone and on the train as well, I find unless people know you already they don't want to engage – there is no interaction with the people unless you knew them before... it's strange, I don't know if it is a cultural thing now or if people are more guarded than they were 20 or 30 years ago or people are just too tired to talk – don't have the energy – First thing in the morning or last thing in the evening. (Int10, Peter, English, 50's, union employee)

My other main findings here is that the more commonly reported social interactions – or rather anti-social interactions - were those related to encounters with drivers, especially taxi drivers; the experiences with bus drivers were more mixed. Pawel indicated that he had social interactions with other cyclists on the road

when there is something unusual to comment on. It's either a moron of a driver who got both of us nearly killed or else something else out of the ordinary... Then there is an occasional kind of exchange of comments and off we go – [these comments] are hardly ever pleasant when someone tries to kill you. (Int12, Pawel, Polish, 30s, legal secretary)

I note here then that (public) bikers do not have a monopoly on these negative interactional experiences. As Currie and Stanley argue "[i]nteraction with strangers is not always perceived as a positive feature of travel by public transport. Many transport disadvantaged groups are discouraged from public transport travel because of racism or fear of personal security." (2008: 545)

Community, civic pride and belonging

In spite of the lack of positive interactions described above, some of my respondents felt that there is some sense of community amongst *dublinbiker*s, particularly outside of the central zone:

> and yes there is... a certain sense of community when you do pass them outside that circle, like even if I am not on a bike... there is sort of like 'god you're far from home', you know that way? - which is nice. (Int14, Alan, 20s, PG student)

Fionn maintained that he could sense a "slight communal feel" to being in traffic with other cyclists and with other *dublinbikers* in particular:

> You are part of this bigger movement and it's positive and it's pretty good. And I think there is a sub-set of that when you are on a Dublin Bike and the three people around you are on Dublin Bikes, there's, you get these tiny moments of camaraderie at traffic lights – if you are letting somebody go ahead, you do have those little moments, the fact that you are on the same model of bike fosters that a little bit. (Int30, Fionn, 30s, digital media SME person)

Frank, on the other hand, disagreed quite strongly with the notion that there is some sort of a (trusted) community of users. There was "no 'esprit de cours' within the DBS community..... [no] communal spirit" he felt (Int24, Frank, 40s, business man (and former architect)).

While I recognise the differences of opinion on the (more nebulous for some perhaps) notion of 'communal feelings', my respondents were *ad idem* on the (somewhat) related point of there being great civic pride for the scheme. "It is something that Dublin can be proud of", as Claire put it (Int34, Claire, film producer, 30s). Slightly more cynically, but along the same lines, Joe said "I have to say it's fantastic. Everything works which is another odd thing for this country really" (Int36, Joe, 50s).

6.5 – Chapter conclusions

My empirical evidence strongly suggests that the *dublinbikes* journey is a multi-faceted affair in which the bikers enjoy - or sometimes suffer - a heightened multi-sensory experience of movement and are aware of their bodies and the streets in ways that appear new to them. Even though the average journey time is less than one quarter of an hour, a goes on in that short period.

Furthermore I maintain that public biking provides a distinctive emotional experience of moving about and sense of the geography of the city. Crucially the *dublinbikes* give a near first-hand insight into the states of consciousness, physical and emotional experiences and perspectives of 'ordinary cyclists' vis-à-vis how the streets are perceived not to have been configured for easy and safe bicycle movements. This insight has policy implications in terms of potential changes in the acceptability (amongst 'Dubliners') of measures to make the city more bicycle friendly (which might otherwise be less palatable), especially given the very large numbers of public bike subscribers.

The states of consciousness which public bikers experience echo those of 'ordinary cyclists'. My evidence also suggests that the form of social control that mass motorisation has created, as Freund and Martin (2009) have theorised, has also shaped journey experiences - a very real dimension here is the anxiousness and fear felt by many on at least part of their journeys or some of the time. Some public bikers argue that bicycle travel through public space gives a unique experience because of the speed of transition from one space to another and in the sense of not being in a 'container' and so having a greater sense of personal space. Others speak about a more nebulous but almost spiritual connection to the city and its history while on a bike, reminiscent in some ways of Edwardian period motor touring "as 'a voyage through the life and history of the land'" (Urry, 2006: 26).

An inescapable dimension of the journey is the multi-sensory experience of the 'traffic environment', much of this in a weary sense. Public bikers are keenly aware of the (pretty much) all-pervasive traffic, the often aggressive movements of taxi drivers, the intimidating vertical presence of buses, together with flitting and meandering pedestrians appearing out of nowhere. The public bikers also have a vested interest in being hyper-aware of the physical infrastructure and traffic management measures that shape their journeys and some are (constantly forming) opinions on how streets ought to be.

My data reveals a more complex and nuanced picture in relation to the social life of public bike users than originally hypothesised. My evidence suggests that the use of the *dublinbikes* has not prompted (in a technologically deterministic way) a new regime of sociability amongst unacquainted others on the streets. Of the interactions amongst users which do occur, they mainly take place at *dublinbikes* stations while loitering either for bikes or free spaces or facilitating tourists (who are confused by the technology). However, I do suggest that the public bikes create new opportunities for socialising because the bikes offer new choices to reach destinations which were previously unreachable or very difficult to reach especially, for example, within a tight lunchtime period. Some, what you could call, sociable interactions do happen on journeys but primarily with those already acquainted - friends or colleagues. Furthermore, my data support and extend the (2003) theories of Demareth and Levinger's in regard to the concept of pausability: what *dublinbikers* share with other cyclists and with pedestrians is the ability to stop and pause and take in at closer quarters both the built and natural (non-human) environment, and chat with those (already acquainted) encountered on journeys. What appears to happen less than hypothesised is sociable encounters while journeying with unacquainted others. I found little support amongst *the public biking population* for the notion of conviviality amongst cyclists suggested in Joveneau's (2013) image shown in Chapter 3 (Figure 3.1).

In short, my 'prising open' of the *dublinbikes* journeys to investigate social dimensions of travel contributes to a wider challenge to that orthodox approach to transport planning and builds upon the work of scholars such as Banister (2008) so as to articulate further the nature of a more holistic sustainable mobilities paradigm.

Chapter 7 – Systems

7.1 – Introduction

7.1.1 Research questions

I argued in Chapter 3 that the *dublinbikes* are a classic example of a socio-technical system, so in this chapter I explore how exactly this system has 'nestled' into the broader social, economic and technological contexts. I examine what, if any, adjustments to the receiving environment took place before, during and after its arrival, and probe what 'ripple-effects' (or unintended consequences) occurred as the new system bedded in. The argument I will develop, echoing Urry's to some degree in regard to the car (UrbanAge, 2013), is that the public bikes *are not just public bikes*; the tentacles of the scheme reach into many domains and reshape them along the way. It is the nature of these reshaping processes which is the subject of this chapter.

Note that while this chapter draws primarily on my 'systems level' research (described in section 4.5 of the Methodology chapter), it also draws on some findings from my interviews with and observations of *dublinbikers*.

7.1.2 Chapter structure

This is a difficult chapter to arrange since, as I will argue, there are ongoing processes within (and across) both the Multi-Level Perspective (MLP) 'levels' (landscape, regime and niche) and the 'domains' (or 'dimensions' – of which I identify around six or so) as shown in the MLP schematic in chapter 3 (Figure 3.3). In Hughes' terms there is a 'seamless web' in which "physical artefacts, organisations, natural resources, scientific elements, legislative artefacts are combined in order to achieve functionalities" (as quoted in Geels, 2002: 1257). It is difficult therefore to separate the highly interconnected realms[179]. To present my findings in a strictly chronological order would mean constantly switching between levels, domains and processes and this could lead, somewhat, to a disaggregation of some of my main arguments on specific subjects. Conversely, presenting on the basis of dealing with (quasi-distinct) domains *in sequence* creates either some disruption to or duplication of an overarching narrative. Geels acknowledged this challenge and he related his own story mapping the transition from sailing to steam ships with

[179] Note that I use the term 'realm' quite loosely in this and the following chapter. I use it to encompass domains/dimensions in the MLP framework but also processes cutting across these domains/dimensions.

> a mosaic style of writing, shifting between different elements of the sociotechnical regime (markets, ship designs, insurance rules, actor groups, institutions, mail subsidies, persistent and emerging problems, management practices).... (2002: 1263)

While noting the advantages (for Geels) of his 'mosaic style' of narrative, I opted for discussing five main domains in sequence: politics and advocacy (section 7.3); laws and policies (section 7.4); infrastructures and traffic management (section 7.5); techno-scientific knowledges (section 7.6); and, culture and discourses (section 7.7). While these broad dimensions blend into one another in various ways, I endeavour to describe discrete processes and shifts within each. In the chapter conclusion (section 7.8), I aim to synthesise my empirical findings on the systems effects and present a more coherent picture of the emerging processes. I comment also on the strengths and limitations of the MLP conceptual framework as applied to my study. In the final chapter (8), I blend my findings from the systems level with the micro-level, and look beyond public bicycles.

First of all though (in section 7.2) I examine what, in MLP terms, can be described as the 'landscape' (or 'background') and 'niche level' processes which are integral to developing a more complete picture.

7.2 The Multi-level Perspective (MLP) and *dublinbikes* scheme

7.2.1 Landscape level shifts

According to Geels, technological trajectories are situated in a socio-technical (ST) landscape containing "a set of heterogeneous factors, such as oil prices, economic growth, wars, emigration, broad political coalitions, cultural and normative values, and environmental problems. The landscape is... [the] context for interactions of actors [and is] even harder to change than that of regimes." (2002: 1260). And in his case study of the transition from sailing to steam ships, he argued that passenger transport on the North Atlantic boomed:

> because of European emigration to Northern America. The first wave... occurred in the late 1840s, and was related to... the Irish potato famine (1845–1849), European political revolutions of 1848 and the goldrush in California (1848). The landscape development of liberalisation led to the abolishment of the British Navigation Acts in 1849. In the context of liberalisation and industrialisation, freight transport expanded. (2002: 1268)

While in his study of the emergence of rock'n'roll, the landscape shifts he highlighted were the pressure on the radio regime coming from federal government and advertisers' switch to investing in TV (2007: 1420).

What then can be said of the landscape forming the backdrop to the arrival of public bikes in Dublin? I consider here two short periods – the late 1990's to 2007/08, and then 2007/08 to 2013[180] – in probing this question. Within this short overall time period of just a decade and a half, one might not expect too many structural shifts to be taking place but it seems, in fact, that there were a number of these afoot in a particularly turbulent period in Ireland.

Late 1990's to 2007/08

Shifts in economic activity, in the development and use of information communications technology (ICT), and in the prevailing transport planning paradigm helped create the conditions in which the emergence of a (3rd generation) public bikes system, operated on a 'bikes for advertising' model, became feasible.

According to the ESRI (2013)[181] "[b]etween 2000 and 2007, the annual average growth in real GDP and real GNP [in Ireland] was 5.7 per cent and 5.0 per cent, respectively" and Jason Frehill (KI#2)[182] describes how in the early 2000's Dublin City Council was "beginning to see increased levels of vehicular movement occurring in the city and congestion" and was "trying to emphasise and promote more sustainable means of getting around the city". Moreover, there was net inward migration during this period in response to "Ireland's 'goldrush' labour market" (Krings et al., 2013), together with rapidly increasing car ownership levels. For example, the size of the national vehicle fleet grew from 1,666,744 in 2000 to 2,400,476 in 2007 (Central Statistics Office, 2012c: 66). Furthermore, in the realms of media and advertising, by 2007 total Irish advertising expenditure had reached a value of €1.557 Billion[183], with outdoor advertising alone accounting for €0.125 Billion (Shaw et al., 2010: 143, quoting figures from Nielsen (2010)). Further still, throughout this period there was steady growth in the reach of the internet in Ireland: in 2004,

[180] I am generally taking the end of 2013 as the cut-off point for my case study research – both in terms of the processes examined and in terms of material published – although I do include some statistics and references from 2014.

[181] The Economic and Social Research Institute. See ESRI. 2014. *History* [Online]. Available: http://www.esri.ie/about_us/the_institute/history/ [Accessed 24/Sept 2014.

[182] My Key Informant #2 – a planner working in Dublin City Council. See Chapter 4, Section 4.5.3.

[183] For comparison, the figures for total Irish advertising expenditure for subsequent years were: 2008, €1.506 Billion (Bn); 2009, €1.282 Bn; 2010, €0.604 Bn. Page 143 from SHAW, H., PICARD, R. & SPAINK, H. A. 2010. Irish Broadcasting Landscape: Economic and Environmental Review for the Broadcasting Authority of Ireland (BAI). Athena Media. Data for years prior to 2008 were not available.

38% of all households had internet access (Central Statistics Office, 2006), while by 2008 the figure was 63% (Central Statistics Office, 2013a) and by 2013 the figure was 82% (ibid.).

Within the field of transport planning, or at least at an urban level in some of north western Europe, a discursive shift began to emerge from a 'predict and provide' model towards the 'sustainable transport paradigm' (Banister, 2008)[184] as I discussed in Section 3.1. In policy terms, this meant focusing on the need to reduce (single occupancy) private motorised vehicle trips and increase those by mass transit and non-motorised transport. From his review of transport strategies in the capital from 1941 to 2006, Leahy argues that the (1994) Dublin Transport Initiative and the Quality Bus Corridor programme it delivered were the first time there was a real focus on "integrated transport" in the capital (Leahy, 2010: 7). So, in transport terms, Dublin City began to experience some significant changes on the ground as well as in policy discourses. However – and crucially - these shifts were accompanied by the largest investment in Ireland's motorways in the country's history (National Roads Authority, NDG (Assume 2011))[185].

A further notable background shift was a broader normalisation of (some of) the green agenda, and in 2007 this was expressed at the ballot box with six Green Party TD's[186] elected to Dáil Éireann, five of whom were returned in Dublin County (Government of Ireland, 2007: 56). In 2009, with a three party coalition consisting of The Greens, Fianna Fáil and the Progressive Democrats, the government published the *Smarter Travel* policy document (Department of Transport, 2009c) and the *National Cycle Policy Framework*, Ireland's first such policy (Department of Transport, 2009a).

A further 'landscape level' matter was the on-going need for Local Authorities to find new sources of income, with capital expenditure projects "financed largely by State grants" (Department of Environment, 2007). It was within that wider context that "the Planning Department of the Council decided they could make some money for Dublin by putting up more advertising" as Cllr. Andrew Montague (KI#4)[187] explained. Finally at a global level (as discussed in Chapter 2) there was a rapid increase in the number of bike sharing schemes during this period and by 2009 there were "about 120" bike sharing programs in the world (DeMaio, 2009: 43).

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[184] This is not to say, of course, that it then became the *dominant* paradigm.

[185] For a discussion of changes in national planning policy and practice over a roughly similar period see: CLINCH, J. P. & O'NEILL, E. 2009. Applying Spatial Economics to National Spatial Planning. *Regional Studies,* 43, 157-178.

[186] TD stands for Teachta Dála, a member of Dáil Éireann (the Lower House of the Irish Parliament).

[187] My Key Informant #4 – a Labour Party Councillor for Dublin City Council. See Chapter 4, section 4.5.3

So, at its broadest level, there were several critical 'landscape level' developments occurring within which Dublin's public bike scheme emerged, as I explain further below.

2007/08 to 2013

While the global and Irish economies entered a recessionary phase in the late 2000's, the macro-trends in regard to an increased penetration of information and communications technology (ICT) and towards an increase in the extent of the financialisation of everyday life in Ireland continued, as I explain below. I argue here that these further background shifts helped to shape the development of the public bike scene in Ireland.

According to the ESRI (2013) "[b]etween 2008 and 2011 real GDP declined by 5.4 per cent, while real GNP declined by 10.1 per cent". Meanwhile petrol prices in Ireland rose significantly between September 2009[188] (€1.18 for regular unleaded petrol, €106.70 for diesel) and September 2013 (€1.61 for regular unleaded petrol, €1.52 for diesel) (AA Ireland, 2013). In this economic context, the extremely low annual fee (€10 per annum) for accessing the *dublinbikes* scheme(see Chapter 2 and Chapter 5) resonated well with "the new paragon" of thrift (Cullen, 2009) at the end of the 2000s. Meanwhile, from a figure of €124M in 2007, the annual spend on outdoor advertising in Ireland in 2010 had dropped substantially to €42M (Shaw et al., 2010). It is partly in response to this rapid reduction in outdoor advertising income that one can understand the changing nature of the business model used for the 2013-14 expansion of the bike scheme:

> The new contract does not involve any additional advertising, instead the council will pay JC Decaux €1.925 million a year to run the service... The council has secured €5.2 million from the National Transport Authority to cover most of the €6.1 million cost of installing the new stations. The annual subscription fee is to increase from €10 to €20 a year, or €2 to €5 for three days... However, it estimates it will need to find €500,000 a year to supplement the running costs. It hopes to secure advertising sponsorship to help reduce this cost. JC Decaux is currently in discussions with a number of "high profile brands" the council said, for a sponsorship package which would include joint naming rights, branding on bikes and associated infrastructure, and public relations and communications events. (Kelly, 2013b)

This change in the business model parallels somewhat that of the Spanish experience, as Beroud and Anaya explain:

[188] The month the *dublinbikes* scheme was launched.

> [i]mplementation [of public bike schemes] has slowed down because of the economic crisis and the recognition of the technical and financial complexity of the schemes... More and different funding sources are needed because outdoor advertising companies have become more reluctant to offer comprehensive public bicycle systems. This is evidenced in the reduction in the number of companies tendering for schemes (resulting in the tender for an enlarged Barcelona scheme being declared void and the Madrid scheme being postponed). (2012: 285)

However, the earlier trends of increasing penetration of ICT on the one hand and of the financialisation of everyday life on the other (Langley, 2008) continued during this period: more and more aspects of our lives became bound up with the online world and complex financialised systems. The significance of this for bike sharing in Dublin relates to the ease, at least for those with bank accounts (see Chapter 5), of obtaining a *dublinbikes* card: with just a few taps on a keyboard (or smart phone), one had access to an additional form of urban mobility.

Running, it would first seem, in the opposite direction to increasing the financialisation of everyday life, another background shift which I argue is relevant to my study is the trend, at least for some, towards 'collaborative consumption': "systems of organized sharing, bartering, lending, trading, renting, gifting, and swapping....[that] gives people the benefits of ownership with reduced personal burden and cost and also lower environmental impact" (Botsman and Rogers, 2010). One can think of car and bike-sharing schemes as examples here or even garden sharing: matching people with unused gardens to those without gardens but with horticultural skills as Hopkins discusses (TED, 2009). On this apparent trend, Botsman and Rogers argue that it is not "a reactionary blip to the recession. It's a socioeconomic groundswell that will transform... the way people fulfil their needs" (2010). As against their position though there is still, according to Geels, "a cultural preference for private property rather than collective ownership and use; this preferences [sic] stimulates the individual ownership of cars and works against car or bike sharing schemes" (2012: 477).

7.2.2 Niches and niche cumulation

I consider here the 'niche level' of the MLP (while again referring to Geels' schematic – Figure 3.3 in Chapter 3) and assess the applicability of the concept to the focus of my case study.

Niche uses, users and periods of use

The '3rd generation' of bike sharing schemes had largely (but not completely) stablilised, technologically, by the early to mid-2000's (DeMaio, 2009) ahead of the *dublinbikes*' launch in

September 2009. Furthermore and fortuitously for Dublin, the mundane but essential technological tweak of 'beefing up' the bikes' locking mechanisms (following significant theft and vandalism of otherwise identical bikes in the early phase of *Vélib'* in Paris[189]) occurred *just before* the creation of the Dublin scheme as Jason Frehill (KI#2) explained. Therefore, in innovation studies terms, it would be completely incorrect to think of Dublin as an 'incubation centre' (Davelaar and Nijkamp, 1989) for the development of this niche technology because the concept was transplanted directly from the Continent. However what is interesting from a transport history perspective, is that the bike sharing innovation emerged from within the Planning Department of the Council rather than a Roads and Transport / Engineering Department[190]. In other words, this innovation on the Dublin transport scene emerged outside of the traditional 'fiefdom' and culture of traffic and transport.

The concept of the 'niche' is helpful when considering, firstly, the uses (or 'journey purposes' in transport studies' terms) of the bikes. Of Murphy and Usher's respondents, 39% used the *dublinbikes* "in conjunction with another mode to complete their trip" of which 56.3% used it with rail and 35.2% with bus (2013: 17), and they deduce that a major role of the scheme is "to provide intermodal connectivity between the[se] two main public transport modes" (ibid.). This outcome is consistent with the design logic used at the planning stages for the Dublin scheme: according to Cllr. Andrew Montague (KI#4), the Council had identified "four criteria for where the bikes should go... Number one was where are the jobs, number two was where are people living, number three was transport hub[s], and number four then was tourist locations". Therefore, as was planned, one important niche use for the public bikes was as a feeder mode linking to longer (public transport) trips. Secondly, and as explored further in section 7.7, the bikes have a relatively affluent user profile (Murphy and Usher, 2013: 14): many *dublinbikers* occupy the niche of being young, male and middle class. A third way to apply the concept of 'niche' is to the times of use of the DBs. My qualitative data explored in the previous two chapters, taken together with O'Brien's visualisations of the public bike data for Dublin (2013) and the findings of Murphy and Usher (2013), suggest strongly that the bikes are being used for a wide array of trip types over the course of the day but with several distinct peak periods: morning and evening normal traffic hour peaks, but also lunchtime in which the *dublinbike* is almost uniquely suited to extending the reach of users during their lunchtimes[191].

[189] As discussed in Chapter 5 (Section 5.2.3).
[190] As explained by Jason Frehill.
[191] As argued in Chapter 5 (Section 5.4).

Niche cumulation?

The three previous spheres together – uses, users and periods of use - raise questions about the possibility of 'niche cumulation': the process by which "radical innovations are used in subsequent application domains or market niches" (Geels, 2002: 1271). The history of technology provides some interesting examples of niche cumulation pathways for some transport technologies. Geels argues:

> The first experiments with steamships occurred in the late 18th and early 19th century in Britain, France and America, in the niche of inland waterways... Wider applications were found in harbours, ports and estuaries, where steam tugs helped manoeuvre large sailing ships in ports. The next step was from estuaries to coastal routes and crossing small seas, for which the Irish Sea, North Sea and Channel provided natural opportunities... (Geels, 2002: 1265)

We might therefore ask the following questions. Firstly, in the future, can we expect the purposes of public bike trips to broaden out beyond what Murphy and Usher categorise simply as 'work', 'education', 'shopping', 'leisure', 'tourism' and 'other' (2013: 30) and beyond the finer grained and more diverse journey types that my respondents described earlier? Secondly, can the user base widen to encompass both genders more equally, all age groups (over 15 years) and all social classes? Conversely, will public bicycles always remain a niche mode of mobility for the relatively young urban middle classes? Will they work in low population peri-urban or rural areas, or are there limits to the expansion of the system? There are variations on the concept – some quite established such as the system integrated with the network of Dutch rail stations (OV-fiets, 2014) and others such as the "Brompton Dock" concept (Brompton, 2013) which integrates foldable bikes into the public biking regime. These variations may provide additional possibilities for bike-share to grow. I leave these questions sitting here for the moment.

7.2.3 The regimes / meso level

Between the landscape and niche heuristic levels of the MLP framework, there is the level of *the regime* (or, for the domain of transport, "not just one regime (automobility), but also other regimes (e.g. train, tram, bus, cycling)" (Geels, 2012: 473)). It is to this "locus of established practices and associated rules" (2012: 472) that I now turn my attention. I note again here that the domains into which I sub-divide my findings (and hence my sections 7.3, 7.4, 7.5, 7.6 and 7.7 below) were shaped partly by those identified in Geels' own MLP led case-studies (as discussed in Chapter 3), but also by the data which emerged from my narrative interviews with key informants (as described in Chapter 4) and by a wider review of data sources.

7.3 Politics and advocacy

I address two main questions in this section: firstly, in what way did the political regime in the mid 2000s facilitate the introduction (and, subsequently, the flourishing) of the *dublinbikes*; and secondly, did any shifts in politics ensue following its introduction? By 'politics', I mean (party) politics at local and national levels, but also the wider processes and practices of influencing others through activism and advocacy.

7.3.1 Shifting political priorities creating conditions conducive for public bikes?

In Chapter 2, I referred to the Green Party's *Witte Fietsen* stunt (McDonald, 1996) aimed at denouncing the City Council's auto-centric policies and suggesting an alternative approach to transport. The idea vanished without trace for the remainder of the 90s but then re-emerged, as Jason Frehill (KI#2) recounted:

> In 2001...from a Local Authority perspective, it was a key time because the Director of Traffic went out to tender for a bike rental scheme and the costs that came back were prohibitive and as a result of that then we didn't introduce a bike rental scheme

For a second time then the idea appeared to fade away until Cllr. Andrew Montague (KI#4) began to promote the idea in the mid-2000's. He is widely credited with successfully advancing the concept during this period (see for example Kelly, 2005a) and his recollection of events was that

> It was a kind-of confluence of ideas... when I was running for election in 2004 – I was doing some voluntary work for an environmental group out in Ballymun called GAP, Global Action Plan... – and one of the guys there... said 'have you heard about this bike rentals in Copenhagen, city bike scheme...' and I thought it was *really interesting*. And I did a fair bit of research about it – and I read about the Lyon one.... So I had been pushing this idea, but separately the Planning Department of the Council decided they could make some money for Dublin by putting up more advertising so the advertising idea came up separately.

The realisation of the concept occurred during but separate from the implementation phase of the Dublin Transport Office's (2001) 'Platform for Change' strategy which included the development of a 'strategic cycle network' and a 'quality bus corridor' (QBC) programme[192]. A

[192] The Final Report of the Dublin Transportation Initiative (DTI) was published in August 1995. It recommended an integrated transportation strategy for the Greater Dublin Area for the period up to 2011.

further force shaping thinking during this period was the growing cycle campaigning movement[193] and I argue, while writing as a participant in that movement, that organised cycling advocacy from the mid-90s onwards helped to de-marginalise the bicycle in transport thinking, policy-making and practice, at least in a Dublin context (see Ó Tuama et al., 2013) and furthermore this work helped create a more receptive environment for a public bike scheme. In the terms of the MLP, I think about this advocacy dimension as being part of the 'socio-technical regime', or the established set of practices and rules, because it is more 'agile' or malleable than factors operating at the 'landscape level'.

7.3.2 Re-energising and reshaping cycling advocacy?

While I do not suggest that organised cycling campaigning stimulated the emergence of the *dublinbikes*, I do argue that the scheme shaped cycling campaigning in Dublin to some extent and, consequently, this helped progress some further policies and practices of the Council.

According to Will Andrews (KI#3), Chairperson from 2009 to 2012 of Dublin Cycling Campaign (the main advocacy body in Dublin since 1993 (Dublin Cycling Campaign, 2013)), the intensive uptake of *dublinbike* use by the business community enabled campaigners to demonstrate that cycling was "an activity for those not ostensibly interested in health / environmental benefits" and, more generally, that "cycling was very efficient as a transport mode in the DB catchment, and that the Dublin centre was well suited to cycling". In other words, the broader uptake of cycling reinforced arguments already made by cycling advocates. Moreover, Andrews maintains that the introduction of the bikes improved morale significantly within the advocacy group "due to [the] apparent success of cycling and [the] spread to [a] new segment of users (businesspeople)" (ibid.). I suggest here that the raising of morale – the "emotional dynamic" (Goodwin et al., 2001) or sense of "well being and enthusiasm for collective endeavours" (Zeitz, 1983: 1089) - within a social movement is very important: the spirits and energies of volunteers are elevated thus enabling the campaigning body to maintain their sometimes grinding lobbying efforts over more sustained periods.

The Dublin Transportation Office (DTO) was set up in 1995 to carry on that transportation planning process. DEPARTMENT OF TRANSPORT, T. A. S. 2002. *Publications* [Online]. Available: http://www.transport.ie/viewitem.asp?id=2664&loc=845 [Accessed 23/Dec 2013].

[193] There were close ties (in the early years particularly) between the Irish Green Party and the Dublin Cycling Campaign with several "high profile politicians... involved in the campaign... Eamon Ryan – previously Minister for Energy, Communications and Natural Resources; John Gormley and Ciaran Cuffe – previously Minister for the Environment and Local Government, and Junior Minister for Transport." ALDRED, R. 2012d. The Role of Advocacy and Activism. *In:* PARKIN, J. (ed.) *Cycling and Sustainability*. Emerald.

Furthermore, and tying into arguments below on speed limits, Andrews maintains that the bike rental scheme "may have focussed Campaign activity more on the DB catchment area and its immediate hinterland, to the exclusion of outer areas" and that its popularity "gave a big boost to the campaign of early 2010 regarding 30 kph designations in central Dublin and in the DB catchment area (mentioned in Campaign press release of Jan[uary] 30th [194] which was re-quoted to many outlets)". Montague (KI#4) agrees with Andrews' position here, positing that the Campaign's support "was crucial at the time" in regard to winning votes in the Council chamber to create (and then subsequently to retain) the 30kph zone. Therefore, in a geographic sense and from the point of view of targetting efforts on a particular policy, the introduction of the *dublinbikes* shaped the work of the advocacy group.

Andrews also notes that while there was "little co-operation" with the "DB organisation itself" (i.e. J.C. Decaux), "[e]xisting alliances with [the] Cycle Forum and Cycling Officer in Dublin City Council were strengthened. Also alliances with pro-cycling City Councillors". So, as I argue in 7.6 below, while the outdoor advertising company formed a formal (Public Private Partnership) alliance with the Council which, inter alia, helped to realise and then raise the profile of the *dublinbikes*, there was also closer cooperation between the advocates and the Council on the back of introducing the scheme. The specific focus for cooperation was the 30km/h speed limit zone, and the advocates used the *dublinbikes* to buttress its arguments in favour of the proposals (or, strictly speaking, to buttress its arguments against the removal of the 30km/h zone shortly after it was introduced). The advocates' press release on that topic for example, alludes to the *dublinbike*s. The following year, the advocates drew on the success of the *dublinbikes* scheme as part of a separate campaign to have the position of *Cycling Officer* retained when funding for the post, as provided by the Minister for the Environment, Community and Local Government, was set to be discontinued (Dublin Cycling Campaign, 2011b).

In summary, the campaigning priorities, energies and tactics of advocates shifted in several ways as the *dublinbikes* scheme bedded in and subsequently - and in some cases consequently - as various opportunities and threats emerged. While some of these behind-the-scenes reconfigurations may seem subtle, the impacts of the new alignments and coalitions are not: they are the difference between other policies (which can have their own shaping effects) being adopted or rejected.

[194] Note that the original webpage including the press release is no longer available following the creation of the new website for Dublin Cycling Campaign (in 2011/2012). However, some of the material from that page was transferred across to the new website: DUBLIN CYCLING CAMPAIGN. 2010a. *Support 30 km/h Campaign* [Online]. Available: http://www.dublincycling.ie/cycling/support-30-kmh-campaign [Accessed 19/April 2015].

7.3.3 *Post hoc* political shifts?

While the evidence is slightly unclear (and still crystallising) and shifts may well have occurred within a 'web of causation', it does appear that the *dublinbikes* helped to move urban cycling (further) into the reach of political antennae – as I argue below. More specifically, the question here is whether observed political shifts (in attitudes, policy positions, campaigning priorities, budgetary allocations etc.) in regard to promoting sustainable transport can be traced back in any way to the *dublinbikes*.

According to Geels "[i]f the radical innovation replaces the existing technology, this is accompanied by broader social, cultural, *political* and infrastructural changes" (2007: 1412 with my emphasis on 'political'). In seeking to apply this aspect of Geels' argument to my case study, I first note that no existing technology[195] was replaced in Dublin. It is, of course, very difficult to show any chain of causal effects because of many potentially confounding issues. For example, earlier in 2009 (the same year as the DB launch) the government, first of all, initiated its *Cycle to Work Scheme* whereby employees could purchase tax free bicycles through their employers (Citizens Information Board, 2011) and, secondly, published the *National Cycle Policy Framework* (Department of Transport, 2009b) from which *National Bike Week*(Department of Transport, 2013) and other initiatives sprung. In regard to the *Cycle to Work Scheme*, Caulfield and Leahy showed that "the scheme has been successful in encouraging individuals to cycle on a regular basis for work and non-work trips, as it has achieved a modal shift and placed cycling as an important mode of transport" (2011: 47). While it may indeed be the case that the success of this latter scheme shaped the thinking of (Dublin based) decision-makers at least as much as the public bikes did, I argue here that there is some evidence that the original *dublinbikes* scheme gave (some) politicians additional momentum behind promoting urban cycling.

First of all, according to Montague (KI#4), City Councillors voted on and approved the Council's *Strategic Planning Framework 2011-2016* for the expansion of the public bike system "to provide for up to 5,000 bikes with between 8,500 - 9,000 docking points" (Dublin City Council, 2011b: 11). Secondly, a cursory examination of some Dublin based politicians' blogs and websites revealed very positive postings about public bicycles and the need for expansion – see, for example, those of Fine Gael TD, Eoghan Murphy (Murphy, 2013c, Murphy, 2013b) and of Sinn Féin (2010). One interpretation (of course) is that the postings merely represent a populist response by politicians, in the classic sense leading the crowd in the direction they are already moving, and the size of the crowd is significant: over 42,000 long term subscribers (J.C. Decaux and Dublin City Council,

[195] Besides some shoes perhaps! This is because, as stated earlier, "45.6% of respondents use the scheme as a substitute for walking": Page 16 of MURPHY, E. & USHER, J. 2013. The Role of Bicycle-Sharing in the City: Analysis of the Irish Experience. *International Journal of Sustainable Transportation*, null-null.,

2014a) and over 10,000 short term subscriptions (Kelly, 2013b). As Montague explained in his interview:

> From a politics point of view... the success of *dublinbikes*... has made politicians want to be associated with bikes in a way that never happened before, so [Fine Gael Minister] Leo Varadkar and... my Labour Party colleague... Alan Kelly are forever getting their photographs at bike launches... I think they are saying, Jaysus it [*dublinbikes*] has 97% approval ratings [in the] *Your Dublin, Your Voice* survey[196]

This point ties in very closely with the argument of Beroud and Anaya (2012) who claim that "[p]oliticians have found public bike schemes to be very good for creating a dynamic, young, environmentally friendly image for the city and the presence of the scheme is a continuous and visible reminder to their electors of their investments and actions. In Lyon and Paris, both majority administrations [who were responsible for introducing public bike schemes] have been re-elected." Incidentally, Cllr. Montague was one of just eight Labour Party Councillors elected to Dublin City Council in the 2014 local elections compared with nineteen in 2009 (Irish Times, 2014) – the suggestion here being that his association with the scheme helped secure his re-election. Thirdly, as explored further below, the scheme informed debates around the introduction of lower speed limits.

There is however an opposing argument here which claims that the perceived poor behaviour of some cyclists - including or perhaps especially *dublinbikers* as often reported in the print media (e.g. Thomson, 2013) and posted on social media pages of the Road Safety Authority (2012) for example - was a contributory factor leading to the announcement by the Minister for Transport, Tourism and Sport that "fixed charge notices will be extended to include cyclists from 2014" (Varadkar, 2013). On this point, Michael Aherne from the National Transport Authority has suggested that since *dublinbikers* may be rushing to reach docking stations before they are filled with bikes (see section 5.2.1 above), that may partly explain reputed poorer cycling behaviours compared to other cyclists (Aherne, 2014). I revisit arguments around the behaviours of *dublinbikers* in section 7.5.

In summary, as regards shifts in the priorities of politicians - one of the actor groups considered within the MLP (Geels, 2012), my research suggests the successful introduction of the *dublinbikes* scheme (in terms of user numbers and other indicators) prompted some politicians to associate themselves closely with public bikes (and to vote in favour of the scheme's expansion) but also to

[196] As discussed at the end of Section 4.4.3.

engage with debates around urban cycling more generally. Further research could be directed more systematically towards this political domain so as to understand the exact ways in which the ripples reverberated within political priorities at local and national levels.

7.4 Laws, policies and technology diffusion

I consider here the new and amended rules[197] which accompanied and followed the introduction of the *dublinbikes* and which had, I argue below, their own shaping effects. My primary focus is regulations at a local government level and, in particular, those of Dublin City Council.

7.4.1 Contracts shaping space

As discussed in chapter 2, there was appreciable negative commentary in the media - both mainstream (e.g. Boland, 2009) and in the 'blogosphere' (e.g. Anonymous, 2008) – in regard to the 'bikes for advertising' contract between the Council and J.C. Decaux, with many thinking that the City had sold itself (and hence the citizenry) short[198]. However, Jason Frehill (KI#2) argued that without the advertising contract, there would be no public bikes:

> [W]hen we went out for a public amenities contract in 2005 we decided to include a public bike rental scheme as part of that initiative. Now... the main focus of that [tender]...was to try to establish a system of managing outdoor advertising in the city that was under the control of... [the] Council. A lot of outdoor advertising... would have been... 'pre-1963'. It didn't require planning permission when it was erected [and] a lot of these... were in quite prominent locations – quite large structures... 48 sheets or the 96 sheet structures - so we wanted to take an element of control over that, so as part of the... contract, which JC Decaux eventually won – not many people are fully aware of this, 100 outdoor advertising structures were taken down... so without advertising, we certainly would not have the bike rental scheme we have today.

[197] Following Geels, I use the term 'rules' loosely to draw on formal rules (regulations, standards, laws), cognitive rules (belief systems, guiding principles, search heuristics), normative rules (role relationships, behavioural norms) as per GEELS, F. W. 2007. Analysing the breakthrough of rock 'n' roll (1930–1970) Multi-regime interaction and reconfiguration in the multi-level perspective. *Technological Forecasting and Social Change,* 74, 1411-1431.

[198] Of relevance to this discussion are the ideas of activist Mark Mullen who maintains that the most efficient market driven approach to making bicycles available as widely as possible is simply for cities to give out free bicycles to residents – see MULLEN, M. 2013. *Bike on the House* [Online]. Velo-city conference website (2013). Available: http://velo-city2013.com/?page_id=2337&project_id=46 [Accessed 23/Apr 2015].

My concern here *is not* to assess the merits of the City Council's deal; it is simply to acknowledge that the contract with JC Decaux led directly to a reshaping of the public realm in the form of the emplacement of new advertising pillars (Figure 7.2) and the removal of older structures. Future research might concern itself with assessing the relative costs and benefits of the visual reshapings of the public realm: what was the net loss or gain in that regard and how were those losses and gains spatially spread (e.g. between more affluent and disadvantaged parts of the city)?

Figure 7.1 - dublinbikes docking station outside the Mater Hospital, Eccles Street

Figure 7.2 - Advertising pillar, Camden Street, promoting DB expansion

7.4.2 Shifts at a Local Authority level

Soon after the scheme was up-and-running (and well used), other instruments began to be reshaped to reflect the emerging shift in culture. Both the Council's new *Cycling Action Plan* (Dublin City Council, 2010b)[199] and subsequent audit of its policy (Ó Tuama, 2011)[200] endorsed the idea of steadily expanding the *dublinbikes* scheme. Of greater weight though were the statutory changes that ensued which I now discuss.

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[199] Action H1 "Expand the Dublinbikes scheme" of the *Cycling Action Plan* included the (albeit non-binding) commitment that there would be a "... phased programme of expansion with the aim of providing service throughout the city within the life of this plan". See page 5 of: DUBLIN CITY COUNCIL 2010b. Dublin City Council Cycling Action Plan 2010-2015.

[200] I declare a potential conflict of interest on this particular point as author of that *BYPAD* Bicycle Policy Audit.

The 2011 Dublin City Development Plan included a specific objective (Objective SIO17) "[t]o monitor the success of the '*dublinbikes*' scheme and to expand to the entire city" (Dublin City Council, 2011a: 58). Similarly, and as Jason Frehill (KI#2) pointed out (Frehill, 2013b), Local Area Plans (LAPs) and Strategic Development Zones (STZs) which were drafted after the adoption of the *dublinbikes Strategic Planning Framework 2011-2016* (Dublin City Council, 2011b)[201] included explicit objectives and policies to support the expansion of the *dublinbikes*. For example, the *2012 George's Quay Local Area Plan* includes the following movement and access policy "2. To seek the provision of additional '*dublinbikes*' docking stations/bicycles in appropriate locations as part of any proposals to enhance or expand the scheme through the city" (Dublin City Council, 2012: 38) while the *2013 North Lotts & Grand Canal Dock Draft Planning Scheme* includes this equivalent policy:

> 4.4.4.5 Supporting & Promoting Innovation
>
> The marketing and promotion of the area as a sustainable place to live and work is also important in influencing travel behaviour. Encouraging innovative approaches to movement such as car clubs etc., is an important part of this. It is an objective of Dublin City Council: MV6 To support the extension of dublinbikes scheme throughout the area. (Dublin City Council, 2013d)

The inclusion of these objectives and policies matters for several reasons, as explained by Frehill. Firstly, when the Local Authority - in this case Dublin City Council - applies for national funding[202], the more inclusions in statutory plans of references to *dublinbikes*, the greater the chances are that the NTA will (part-) fund that expansion of the scheme. Secondly, when the Council is seeking to re-allocate public road space (away from on-street car parking) for the provision of docking stations, again in an expansionary phase of the scheme, this process advances more predictably with those statutory objectives in place (e.g. owners of premises are in a weaker position to argue against such proposals when those LAP / SDZ policies, voted on and adopted by an elected Council, are in place) (Frehill, 2013b). On this the Council states that "[i]t is anticipated that for the most part, [future] bike stations will be located on public carriageway that is currently occupied by on-street car-parking" (2011b: 14). In terms of numbers of spaces, Frehill (2013c) estimates that approximately 140 on-street car parking spaces were removed with the works associated with the initial phase of the bike scheme, and a further 140 spaces will be removed with expansion eastwards and westwards - i.e. in Phases 2A and 2B respectively (Dublin City Council, 2011b: 16).

[201] As discussed in 7.3.3 above.
[202] From the National Transport Authority (NTA).

As regards bye-laws[203], according to Montague (KI#4) and Frehill (2013a), the introduction of the first phase of the *dublinbikes* did not require any new bye-laws or changes to existing ones.[204]

7.4.3 National policy and technology diffusion

The first reference to public bikes in a national level policy document in Ireland was in the Department of Transport's (2009b) *National Cycle Policy Framework* (NCPF)[205]. While the *dublinbikes* scheme had not yet been launched at this point[206], much of its physical infrastructure was in place. In fact, J.C. Decaux had received planning permission for the advertising panels linked to the bikes in 2007, and 2008 for those appealed to An Bord Pleanala (Kelly, 2008). Objective 9.1 of the NCPF read:

> We will provide municipally-run "public bike" facilities in all cities above 100,000 population such as the O-ve bike scheme in the Netherlands. We will examine and closely monitor the Public Bike System that is due to be launched in Dublin in 2009, as well as studying the systems from abroad before developing Irish versions. (2009b: 31)

While the above inclusion in the NCPF did not appear to reverberate very much (or at all) with the public, the success of *dublinbikes* appeared to stimulate demand for equivalent schemes in regional cities (in late 2010 to mid- 2011) at least initially in the guise of "Facebook" social media campaigning pages for Galway (Galwaybikes.ie, 2011), Cork (Corkbikes.ie, 2011), Limerick (Limerickbikes.ie, 2011) and Waterford (Waterfordbikes.ie, 2011). The typical message on these pages read: "Let's build on the successes of www.dublinbikes.ie and gather support for the introduction of a similar service in Galway city" (Galwaybikes.ie, 2010). While Aldred has argued that new online blogging groups added to the heterogeneity of the cycling advocacy movement in London (2013b: 200), it is difficult to deduce what impact the online activity in Ireland had on

[203] By-law (or Bye-law): a regulation made by a local authority or corporation. OXFORD DICTIONARIES. 2014. *by-law* [Online]. Available: http://www.oxforddictionaries.com/definition/english/by-law [Accessed 15/Feb 2014].

[204] However, it is understood that given the need to service bike stations using special goods vehicles (see Figure 5.1 in Chapter 5), further dedicated space alongside those stations located on narrow streets may need to be allocated for these purposes – and this may require the adoption of new bye-laws. These bye-laws (should they be enacted) can be understood as a further instrument for reconfiguring public space away from private motorised vehicle use (except of course for those periods when those special vehicles themselves are servicing the stations).

[205] This policy was published in the April of 2009: DEPARTMENT OF TRANSPORT. 2009a. *Dempsey launches Ireland's First National Cycle Policy Framework* [Online]. Available: http://www.transport.ie/pressRelease.aspx?Id=85 [Accessed 18/Nov 2013]. I must also declare an interest here that I was the main author / project manager drafting the policy framework while working in *Colin Buchanan* and collaborating with the Dutch company *Interface for Cycling Expertise* (IC-E).

[206] That was September 2009. RTE NEWS. 2009. *2,000 join Dublin bicycle scheme (published on Sun 13/Sept 2009)* [Online]. Available: http://www.rte.ie/news/2009/0913/121728-bicycles/ [Accessed 18/Nov 2013].

advancing the policies I describe below (and, indeed, it is difficult to ascertain if and how the new bloggers impacted on, what might be called, traditional cycling advocacy groups).

While online (grassroots?) advocacy gained at least some pace, several feasibility studies were commissioned by the NTA, both from engineering perspectives(e.g. Jacobs Engineering Ireland Ltd., 2011) and commercial ones (e.g. KPMG, 2011), and in 2012 the NTA sought expressions of interest for sponsorship so as to establish public bikes in the regional cities (National Transport Authority, 2012). This led, in January 2013, to a decision that municipal bike schemes "were to be wheeled out in up to four more cities" (Brennan, 2013) and to an apparent shift *in policy*[207] towards supporting the "[e]xpansion of bike sharing schemes" (National Transport Authority, 2013 38) within the Greater Dublin Area.

Separately, but seemingly drawing on the success of the *dublinbikes* scheme, NUIG (the National University of Ireland Galway) initiated the first cycle-sharing scheme outside of Dublin in mid-2013 (Grand Scheme, 2013, Siggins, 2013) - a more modest in sized scheme (45 bikes) with on board GPS tracking devices on bikes. And additionally it was announced in August 2012 that Belfast would introduce a cycle hire scheme which also appeared to have drawn some inspiration from the experience in Dublin. As was reported in the Belfast Telegraph:

> The project will be the latest in more than 100 city bike hire schemes worldwide, including major ones in London and Dublin... East Belfast Ulster Unionist MLA[208] Michael Copeland said he was confident the development of a public bike hire scheme can assist in Belfast's continuing transition to a modern European city, and that tourists and locals alike will benefit from it. SDLP councillor Tim Attwood said the Dublin bike scheme is one of the most successful in Europe, attracting more than 70,000 subscribers since it began in September 2009, and is due to treble from 500 to 1,500 bikes. (Stewart, 2012)

What is note-worthy here is the suggestion that being or becoming a 'modern European city' is, at least in part, being defined as having public bikes. That this is asserted may also signal a shift in how urban bicycling more generally is viewed. To conclude, Parkes et al. have stressed the importance of entrepreneurs "in both the private and public sector" in spreading public bikesharing systems and accelerating their deployment in Europe and North America (2013: 102).

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[207] Or perhaps more correctly, a shift in the implementation of an existing Dublin City Council policy.

[208] "Members of the Legislative Assembly (MLAs) are elected by, and represent the people of, Northern Ireland. MLAs pass laws and examine policy on transferred matters like health, education, the environment, social work and housing. They scrutinise the work of Ministers and hold Departments to account." NORTHERN IRELAND ASSEMBLY. 2014. *Your MLAs* [Online]. Available: http://www.niassembly.gov.uk/your-MLAs/ [Accessed 31/March 2014].

It seems in Ireland there is also complex web of actors from non-governmental organisations, the public sector (politicians and officials at national and local levels) and the private sector – and the media – whose actions have resulted in a diffusion of the technology to three further cities beyond Dublin. I revisit the subject of actors and alliances later in this chapter.

7.4.4 National laws – the experience from abroad

Beroud and Anaya indicate that in France "[t]he national commitment to the environment (Engagement National pour l'Environment)... 2009-2010...empowers local authorities to implement public bicycle schemes. Before, there was no legal framework to implement... schemes" (2012: 281). Beroud explained the advantage of such frameworks:

> Before 2009, public bicycles was [sic] not quoted in any law. The law has officiated the existence of this services. Before the law, most of the cities implemented it has a public market, linked to adverting panels or not. With the law, I would say that it has been integrated in the Transport authority toolbox. Then appeared the integration of public bicycles scheme within public transport delegation contracts. (Beroud, 2014)

In other words, the national law helped transport practitioners see public bicycles as transport vehicles. Drawing on her work in Spain and France, Anaya elaborates on the role of national laws in developing these systems:

> [I]t depends on how the issue is framed in the national policy... [e.g. if]... it's treated under Environmental... Energy... or Transport Policy... and also on how the country deals with "emerging" subjects... (that is, if there is a tendency to include emerging subjects into law as soon as possible or if it takes a long time and then they opt to take it into strategic / less strong policy instruments). France and Spain are also different ... [U]rban mobility is treated under national law in France, whereas in Spain it is subsidiarity of the local governments (Anaya, 2014)

In Ireland, Jason Frehill (KI#2) explained that no changes to national laws were required in order to bring in this new socio-technical system:

> [T]he [*dublinbikes*] scheme was brought in by way of exempted development under the Planning and Development Act and Regulations. The only thing that changed... from a regulatory perspective is that we... went through Council whereby we would have

> decommissioned some on street car parking spaces for the purposes of using those spaces as bike stations... [but] no real changes as to any [National] regulation.

The main point to be deduced here is that while national legal frameworks appear to have helped normalise the introduction of public biking in some states, no such changes in laws in Ireland were made but the diffusion of the concept has continued.

Helmet laws

There is one further sense in which public bicycles and national laws intersect. Several scholars of public bikes have argued that mandatory helmet laws have contributed to the poor performance of bike schemes such as that in Melbourne (e.g. Shaheen and Guzman, 2011: 26). Drawing on this argument, Cllr. Andrew Montague (KI#4) maintains that one unpredicted ripple effect or consequence of the Dublin Bikes is that "it has killed the debate on helmets".

He refers here to the very contentious (see, for example, Goldacre and Spiegelhalter, 2013) mandatory helmet wearing debate which has surfaced on a semi-regular basis over the last few years in the Republic of Ireland. See for example the article by Mudiwa (2011) in the Irish Medical Times, written shortly after the Northern Ireland Assembly members voted in favour of a bill to mandate helmet wearing[209]. Montague further maintains that

> Anybody knows that if you bring in compulsory helmet laws, that is the end of *dublinbikes*... The government has put so much money into *dublinbikes* – they are expanding it now to other cities so if [Minister of State for Transport] Alan Kelly said to me in the morning we're going to bring in helmets, well [I'd say] 'ok you've just wiped out all that six million [Euro] investment that you've just put in that's it... So it gives us an extra tool – I don't know whether it has been the decisive thing – it's certainly an important weapon in our argument.

Tragically, the debate over the use of helmets did surface when a Brazilian medical student died (in 2011) "when he fell off his [*dublinbikes*] bike and hit the rear bumper of a taxi while cycling home after a night out" (Naughton and Carbery, 2012). This was the only (as of 4/May 2015) fatal collision involving a *dublinbike* since the launch of the scheme.

[209] In the end, the bill was not enacted because time did not permit in advance of the Northern Ireland Assembly elections in May 2011. BICYCLE HELMET RESEARCH FOUNDATION. 2011. *Northern Ireland helmet bill abandoned* [Online]. Available: http://cyclehelmets.org/1207.html?NKey=71 [Accessed 31/Dec 2013].

Engineering guidance

Finally, I consider the question of whether or not the *dublinbikes* scheme shaped in any way engineering design guidance in the form of the new version of the *National Cycle Manual* (National Transport Authority, 2011b). First of all there are no explicit references to 'public bikes'[210] in the (236 page) document. However, according to Michael Aherne (2014) of the National Transport Authority, one difficulty in drafting the new manual related to the (perceived) large speed differential between those cycling *dublinbikes* or old sit-up-and-beg bicycles (i.e. typically quite slowly) on the one hand, and fast-moving commuters (often travelling in from the outer suburbs) on the other. Therefore the guidance which included sections on urban cycle tracks and cycle facilities physically segregated from other traffic, needed to allow for generous overtaking distances for (typically) fast-moving commuters passing slower moving cyclists, including those on public bikes. Overall then, there is weak to moderately-strong evidence to suggest that road engineering design guidance has been refashioned in response to the presence of more slower moving, utility-type, bicycles of which the public bikes are an increasingly important component – at least on the streets of Dublin.

7.5 Infrastructures, speed reduction and road safety

7.5.1 Infrastructures for cyclists

In the previous section, I argued that the original (44 docking station / 550 bike) *dublinbikes* led directly to the reallocation of approximately 140 on-street car parking spaces for bike stations, and that the 2013-14 expansion of the scheme (to 110 docking stations and 1500 bikes) was removing an additional 140 spaces. Here I will argue that there are further physical changes which have occurred either *only because* or *partly because* of the *dublinbikes*.

Grand Canal Cycleway and S2SDocklands 'Premium Cycle Route'

In early 2010, Dublin City Council began design work on its *Grand Canal and S2S*[211] *Docklands Premium Cycle Route* and the scheme opened in early 2012 (Department of Transport, 2012). This project aimed at providing a (Dutch style) segregated cycle route of approximately 5km in length with much of it running alongside the Grand Canal and it involved the "[r]emoval of 270 pay and display [car parking] spaces" (Dublin City Council, 2010d: 2).

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[210] Nor any references to 'Dublin Bikes' or 'dublinbikes' or 'bike-sharing'.

[211] S2S: Sutton to Sandycove cycle route. A proposed / partially built "continuous seafront promenade and cycleway" running between the suburbs / suburban villages of Sutton and Sandycove. S2S. 2014. *S2S Sutton to Sandycove* [Online]. Available: http://s2s.ie/ [Accessed 08/Mar 2014].

As per the (revised) tender brief for a 'Design Review' of the scheme (dated Feb 2010), one of the aims of the project was "[t]he delivery of correct, safe and compliant designs that meet the requirements of cyclists of varied experience (commuters and recreational cyclists)" (Dublin City Council, 2010d: 3). So, while that tender brief did not explicitly refer to public bikes, there is a clear allusion to cyclists of varied abilities. Jason Frehill (KI#2) maintains there was an "interrelationship" between introducing the *dublinbikes* and the subsequent provision of the Grand Canal Cycleway, while Cllr. Montague (KI#4) posits that there was an indirect causal relationship between the two[212]. On the balance of all the available evidence, there is a strong suggestion that part of the logic in providing a high quality cycle route along this corridor (which also marks the southern boundary of the *dublinbikes* scheme – see Figure 7.4 below) was to dovetail with the recently operational *dublinbikes* system and therefore to support, in particular, new cyclists in Dublin.

Phoenix Park to Point Village (P2P) Cycle Route

As the public bike system expanded eastwards and westwards (see the new map produced by J.C. Decaux et al., 2013)[213] over the period 2013-14, further pressure mounted on the Council to advance a high quality east-west cycling link alongside the River Liffey to link the Docklands in the east to Heuston (rail) station in the west – i.e. the *P2P* route (Ginty, 2012b). There are a number of factors shaping the process of advancing such a cycle route (which may result in the removal of approximately 170 car parking spaces (Kelly, 2013a)) but the success and planned east to west extension of the *dublinbikes* is one of these according to AECOM (2012: 8). Other factors (according to AECOM) are urban design imperatives and a broader desire to provide for 'ordinary cyclists'. The shaping influence of the *dublinbikes* on advancing the cycle route is a position supported by Jason Frehill (KI#2):

> I'd like to say we'll see the emergence of the cycle route from the Phoenix Park to the Docklands area because... it's a major route for cyclists getting down to one of the major employment destinations in the city. But I think that *dublinbikes* has given that extra weight or extra strength, particularly in providing it [the route] close to the Phoenix Park and providing it close to Heuston Station. So I think there is a responsibility on us as a Local Authority in providing this type of [public bike] service that there are adequate levels of infrastructure to support it, so providing *dublinbikes* at Heuston Station – we do need the supporting and ancillary infrastructure.

[212] It was not possible to locate any official documentation showing the exact criteria that the authorities [Dublin City Council and/or National Transport Authority and/or Department of Transport] used in choosing the above scheme for investment.

[213] See Appendix 8.1.

Cllr. Montague (KI#4) concurred, maintaining that *dublinbikes*

> is definitely a factor in advancing that [P2P cycle route]. That is the big factor. In fact, we've been kind-of told that in order to get this expansion, that if we are going to be putting *dublinbikes* at Heuston Station, it'll have to be safe for people to get from Heuston station [or]... from Phoenix Park to the Point.

While this cycle route was already written into the 2011 City Development Plan[214], the current east-west expansion of the *dublinbikes* does appear to be providing momentum in advancing the proposal. A further argument here of course, is that the proposed cycle route may have been written into the Development Plan with the expansion of the *dublinbikes* in mind (as set out in the Council's strategic plan for the expansion of the *dublinbikes* (Dublin City Council, 2011b)[215].

Cascade effects?

In regard to the examples above, the evidence suggests that the *dublinbikes* has provided additional weight behind advancing both schemes – one that is open and the other which is at the 'pre-planning stage' and due to go to public consultation later in 2014 (Ryder, 2014). Furthermore, a recent analysis by Seymour and O'Mahony (2014) of the profiles of cyclists on the Grand Canal Cycleway (GCC) as against those on a nearby parallel route with a cycle lane concluded that there is a higher proportion of female users using the GCC (which is potentially quite significant in a city where there is a very uneven (72% male / 28% female) gender split (ibid.))[216]. They also found a greater preference amongst 'utility cyclists' for the GCC. This is consistent with feedback received from some of my respondents - as exemplified by Claire:

> I wouldn't be a confident cyclist... So the fact that you have the track – I think it got people on the bikes that wouldn't necessarily have done it before..... it's a hell of a nice commute if you are just cycling along the length of the canal... I think, for me, they kind-of do go hand in hand. And I don't think the track would have existed without the

[214] As Objective GCO2: "To provide a continuous cycleway connecting the Phoenix Park and Heuston Station to the proposed S2S route along the city's quays in consultation with the Office of Public Works". Page 89 of DUBLIN CITY COUNCIL 2013a. Development Plan Written Statement - Updated May 2013.

[215] It was not possible within the timeframe of my work to investigate that argument further. I.e. to recontact key informants (and others) to ask about such links.

[216] Their "survey results for the on-road cycle lane along the Grand Canal showed a gender split of female users within the 24-28% range and a 76-72% range for male users. Conversely, the cycle track [i.e. the Grand Canal Cycleway] results showed a female percentage within the 33-38% range with a male percentage within 67%-62%." See page 5 of SEYMOUR, J. & O'MAHONY, E. 2014. Widening the Participation in Cycling-A Case Study of the Grand Canal Cycle Route. *Irish Transport Research Network Annual Conference*. University of Limerick.

> [dublin]bikes and I'm notsure the [dublin]bikes would have flourished as much as they did without the track. (Int34, Claire, film producer, 30s)

Of course these findings tie in with long-running and contentious debates around the benefits (or otherwise) of investing in segregated facilities for cyclists which I touched on in section 3.3[217]. However, the broader point I wish to stress here is that the *dublinbikes* led directly to 280 car parking spaces being removed and, I argue, contributed *indirectly* to a further 270 being taken out on the GCC route (and, potentially, a further 170 spaces if the P2P proceeds)[218]. At the very least, the removal of this on-street car parking provides a comparative disadvantage to the car driver compared with the situation beforehand (see also Feeney (1989) on the impact of parking policies on modal choice)[219]. The reallocation of road space and creation of direct routes[220] also resonates a little with one of Geels' case studies:

> A major change in the physical landscape was the opening of the Suez Canal in 1869. The Canal not only shortened distances to the east, but also proved unsuitable for sailing ships, because of few and variable winds. Hence, the Canal gave steamships a great comparative advantage on freight routes to India and China. (Geels, 2002: 1269)

While obviously acknowledging the vast differences in scale between the changes in the physical landscapes in Geels' example and my case study, the principles or processes are comparable – and that is, that shifts in the physical domain (which have partially resulted from the arrival of a particular technology / socio-technical system) reinforce an emerging comparative advantage for the new technology. In MLP terms, there would appear to be non-linear cascade dynamics or "mutually reinforcing developments" or "knock-on effects" playing out (Geels, 2012: 474).

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[217] A further component of these debates is the 'opportunity cost' of providing such infrastructure – i.e. if the same funding (and energy) was spent on an alternative intervention, would the effects have been different?

[218] To put these figures in context, it can be estimated that there are approximately 12,500 tariffed on-street car parking spaces within the canal cordon of Dublin City – See Appendix 7.1. Another comparator one might use is one of the multi-storey car parks in the south city centre of Dublin, Brown Thomas car park, which has 398 car parking spaces: BROWN THOMAS CAR PARK. 2014. *Brown Thomas - Clarendon Street Car Park* [Online]. Available: http://www.brownthomascarpark.com/page2/index.html [Accessed 25/Sept 2014].

[219] Further considerations here are the occupancy rates of spaces, but I do not examine this here.

[220] One particular advantage of the Grand Canal Cycleway was to put in place a two-way facility along a stretch of road (Charlemont Mall) which was previously only usable one way for cyclists – thus increasing the directness of the route.

7.5.2 Speed limit reductions and shifts in driver behaviours

Shifts in official discourses on procuring 30kph as the speed limit for the city centre can be traced back to 2005, as reported by Kelly (2005b): "Dublin City Council plans to reduce speed limits through much of the city centre from 50kph to 30kph as part of its proposals for new speed limit bylaws. Proposals...recommended the introduction of 30kph limits on O'Connell Street [and in] the suburb of Marino..... as a pilot scheme". In March 2009 the Council published *Proposals for New Speed Limit Bye Laws* and while the report made no explicit reference to *public* bikes, it did argue that:

> [i]n tandem with reducing road collision fatalities and injuries reduced traffic speeds particularly in urban areas will make cycling more attractive. It is one of the aims of the Dublin City Council Cycle Action Plan 2007 - 2012 to introduce a 30kmh zone to cover the City core following the delisting of N-routes in the City Area. The establishment of a city centre core with a 30kmh speed limit will facilitate cycling. (O'Dea, 2009: 2)

Then in October 2009,the month after the *dublinbikes'* launch, the Council "approved the making of the Dublin City Council Special Speed Limit Bye-Laws 2009, to come into effect from 31st January, 2010" (O'Sullivan, 2010). These bye-laws had the effect of creating, for the first time ever[221], a coherent[222] 30km/h zone in the centre of Dublin: see Figure 7.3 and beside it a map showing *dublinbikes* stations locations (Figure 7.4). While there is no doubt the Council had initiated processes to procure lower limits several years before the *dublinbikes' launch*, there is some evidence to suggest that the scheme increased the impetus to lower the limits, a position generally supported by Jason Frehill (KI#2). Cllr. Montague (KI#4) maintains that "it made it easier for me to argue the 30km [per hour limit] because I was able to say, well we've got all of these new cyclists, the *dublinbikes* have been launched now three or four months". As argued already, the raised morale of advocates following the arrival of the *dublinbikes* fed into lobbying efforts to retain the 30km/h limit with the *dublinbikes* becoming one further pillar upon which their pro-30kph position stood (Dublin Cycling Campaign, 2010b).

It should be noted though that other Irish cities introduced 30km/h zones in the absence of their own public bike systems: Cork City Council introduced bye-laws in late 2011 enabling "30 kilometres per hour" to be set in the city centre (Cork City Council, 2011) while Kilkenny city did

[221] "The Road Traffic Act 2004 (No. 44 of 2004) provides the legislative basis for speed limits. The Act introduced metric values for speed limits" DEPARTMENT OF TRANSPORT 2010. Guidelines for the Application of Special Speed Limits (December 2010). Dublin, Ireland: Department of Transport.

[222] Following heated debates (e.g. in the media and Council chambers), the geographical extent of the 30kph zone was reduced very slightly in mid-2010.

likewise in 2012 (Kilkenny County Council, 2012). It is of course possible though (but difficult to prove conclusively) that the Dublin's lower limit made it easier for other cities to follow[223].

Soon after the adoption of the 30km/h limit in Dublin, the Irish Times carried a story indicating that Dublin had "the safest roads of any capital city in Europe, the Road Safety Authority has claimed. The fatality rate has dropped thanks partly to the controversial 30km/h enforcement zone in the city centre, according to the Garda" (McGreey, 2011). However, a subsequent Council report suggested that the issue was not so clear:

> Recent speed measurements...show that the provision of this [30km/h] zone, which includes main access roads with almost no physical traffic calming, has not brought about any reduction in traffic speeds. As there is not yet sufficient recent data available... concerning traffic collisions which occurred after the 30 [km/h] zone was put in place, it is not possible to say what impact, if any, the 30 [km/h] zone has had on the number and severity of such collisions. (Gormley, 2013)

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Figure 7.3 – 30kph Special Speed Limit Zone (O'Dea, 2010: 7)

Figure 7.4 – Part of the zone of the dublinbikes (See Appendix 4.3 for full map)

It is unsurprising that it has not been possible to say what impact the zone may have had on collision numbers and cyclist collision numbers in particular – for two reasons: firstly, there is

[223] Time constraints did not allow for further exploration of this theory.

massive under-reporting of *cyclist collisions* by the Gardaí[224] (Sheridan et al., 2011); and secondly, there are confounding factors such as the drop in economic activity (see 7.2.1 above), the drop in heavy goods vehicle haulage activity (Joint Committee on Transport and Communications, 2012: 14) and changes in taxi numbers on the road (see footnote at Section 3.3.4 above) during that same period. A further consideration though is the 'safety in numbers' (SIN) effect, as discussed in Section 3.4.3, i.e. that having more cyclists on the road reduces individual cyclists' chances of being in collisions.

7.5.3 Safety in numbers and the presence of *dublinbikers*?

In regards to shifts in the interactions between road users in the city centre, my findings strongly suggest that two or possibly three (related) processes are at work following the arrival of the *dublinbikes*. Since these are potentially particularly interesting 'systems effects', I provide a number of examples of each.

Firstly, there is an impression amongst many respondents that drivers are adjusting their behaviours around *dublinbikers,* and driving more slowly and more cautiously around them and giving them wider berths because, it would seem, they are making assumptions (sometimes correctly) about the low levels of road experience of the public bikers. First of all, Fionn commented that:

> A huge side effect of *dublinbikes* has been a large number of inexperienced cyclists, not behaving particularly well and scaring motorists and therefore making them slow down and so, in a kind-of negative way, the low quality of *dublinbike* cyclists has made motorists take note more. (Int30, Fionn, 30s, digital media SME person)

Ian reckoned "they are putting cycling back in people's heads again as a viable means of transport. Even their presence there I think is forcing taxis and buses and that to be wary of bikes" (Int07, Ian, 40's, IT consultant).

Claire agreed explaining that she was a motorist and walker "and I'd be somewhat of a cyclist, now thanks to *dublinbikes*, and it does make you more aware of other people's perspectives from a safety point of view as well" (Int34, Claire, film producer, 30s). This is a crucial point and

[224] In this study, it was concluded that "the number of cyclists injured is under-estimated in the RSA [Road Safety Authority] figures; with 1,050 cyclists admitted to hospital. However, over the same period, just 109 serious injuries among cyclists were reported by the RSA." SHERIDAN, A., HOWELL, F., MCKEOWN, N. & BEDFORD, D. 2011. Admission to Acute Hospitals for Injuries as a Result of Road Traffic Collisions in Ireland, 2005-2009.

illustrates a second process, again raised by quite a few respondents: when *dublinbikers* drive around the city, they then appear to have a heightened awareness of the issues that cyclists (more generally) face on the road. Dermot and Mary, both drivers, explained this:

> I find it makes me more aware of cyclists when I'm driving - that the kind of issues I would see – maybe avoiding a pot-hole and coming out a little bit in front of a car [at junctions] - that I would be more aware of that when I'm driving.... [F]rom that point of view it has helped my awareness of cyclists especially within the city centre which I wouldn't probably have experienced before. (Int19, Dermot, 50s, employers' association rep)

> [I]f you are in a car... you are isolated but [on the DB's] you are just more attuned to what's going on - or it has certainly made me much more conscious of people on bikes (Int16, Mary, 50s, banking employee)

Interestingly, Mary's comments tie in with my arguments (in chapter 6) in regard to the heightened sensory experience of being a cyclist (and possibly even more, a public biker) in the city. Overall, my findings support those of Murphy and Usher (discussed in 3.3) who found that for the vast majority of their car-driving *dublinbikes* respondents the scheme "had raised their awareness of cyclists on the road while driving" (2013: 20). My findings also build on those of Fishman et al. who found that public bikers in Brisbane who also rode their private bicycles indicated that while on the public bikes, there was a distinct improvement in driver behaviour towards them (2012a: 694).

A further possible process at work (or another aspect of the same overall process) is that, as Tom put it, the *dublinbikes* are adding "to the density of bikes as well" (Int26, Tom, 40s, technician) and hence feeding into a 'safety in numbers' (SIN) effect.

However, a smaller number of my respondents disagreed with the notion that adding *dublinbikers* to the streets was (positively) influencing the atmosphere of the streets. Maureen was wary of drawing conclusions in this regards:

> I think it's hard to distinguish [changes potentially wrought by the presence of *dublinbikers* from those bound up with]... the recession. I think the traffic is quieter... it's a variable that kind-of confuses that judgement... I don't think that people are any more considerate <sounding a little weary> – my experience is that taxi drivers are probably the worst <little laugh> - and big lorries... (Int04, Maureen, 60s)

Peter agreed, saying "No... I don't see it, no..... I don't see any kind-of big cultural change or systematic change in things" (Int10, Peter, English, 50's, union employee).

Overall, my findings that *dublinbikers* are generally given a wider berth by road users resonate with Walker's (2007) naturalistic experiments (using instrumented bicycles to gather proximity data) which found that overtaking motorists pass closer to a bicyclist when, inter alia, the rider wears a helmet and is male. Since far fewer *dublinbikers* wear helmets compared to other cyclists (Deegan, 2011)[225] and since there is a slightly greater proportion of female *dublinbikers* than female 'other cyclists'[226], it seems plausible drawing on Walker's arguments that drivers are making assumptions (which may of course be fallible) about the experience levels of *dublinbikers*: i.e. that *dublinbikers* are less experienced than other cyclists and therefore drivers give them a wider berth. Furthermore, this suggested effect appears to be combined with what may be the even stronger effects of more drivers having experiential understandings of being city cyclists through their participation in the scheme. The value of my contribution here is that it gives more depth of understanding to the processes which appear to be at work. As well as the need for future studies to examine collision data closely (including hospital data), my final suggestion here is that it could be insightful to investigate collision patterns further through examining some seasonal public bike systems – such as those in Canada in which bikes are unavailable in the winter (Shaheen et al., 2012b) – and assessing any possible changes in road user behaviours over the periods in which public bikes are present or absent.

7.6 Coalitions of actors, knowledges and resilience

According to Geels, there is a shift in the network of actors involved in new socio-technical regimes (2002). Below I examine this point and the argument that a shifting array of regimes brings new expertise and skills to the fore. Additionally I also posit that while the new public bike system is tightly integrated with other systems, this brings with it new vulnerabilities: the system is not resilient.

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[225] A finding consistent with the research of Fischer: FISCHER, C. M., SANCHEZ, C. E., PITTMAN, M., MILZMAN, D., VOLZ, K. A., HUANG, H., GAUTAM, S. & SANCHEZ, L. D. 2012. Prevalence of Bicycle Helmet Use by Users of Public Bikeshare Programs. *Annals of Emergency Medicine,* 60, 228-231.

[226] 67% of long-term subscribers to *dublinbikes* are male: J.C. DECAUX & DUBLIN CITY COUNCIL. 2012. *dublinbikes – the stats!* [Online]. Available: http://www.dublinbikes.ie/Magazine/Reports/dublinbikes-the-stats! [Accessed 29/July 2012]. Whereas in Dublin City, 72% of cyclists are male, according Seymour and O'Mahony (drawing on Census 2011 data): SEYMOUR, J. & O'MAHONY, E. 2014. Widening the Participation in Cycling-A Case Study of the Grand Canal Cycle Route. *Irish Transport Research Network Annual Conference*. University of Limerick.

7.6.1 Actors, coalitions and linkages

A number of transport historians have discussed how the creation of new networks or coalitions of actors was a vital part of transition processes. As discussed in Chapter 3 (Section 3.4.3), the formation of the Swedish Roads federation involved motorists joining forces with "commercial interests related to road building... and, the Royal Corps of Water- and Road Builders, whose members included university-educated civil engineers and members of the Swedish Technology Association" (2004: 277). Geels, on the other hand, in his study of the transition from sailing to steam ships pointed to the new innovations in the late 18th century shipping regimes:

> the emergence of new social groups: professional shipowners, shipbrokers and insurance companies... [with] insurance companies...[offering] a new way of dealing with the risks of long-distance trading trips. Shipbrokers emerged to mediate between demand and supply of shipping services, i.e. between traders and professional shipowners. [This]... increased the efficiency in shipping, as captains could spent [sic] less time in ports looking for cargo. (2002: 1264)

Clearly, the creation of *dublinbikes* was accompanied by the arrival of a new actor operating within a reconfigured set of mobility regimes, in the form of the outdoor advertising industry. This mirrored, of course, developments in other cities with public bike schemes (see for example Beroud and Anaya, 2012: 287-288). I argue here that other important – or even crucial – actors included the following groups:

- Politicians (as discussed in sections 7.2, 7.3 and 7.5 particularly)
- Special interest groups (e.g. advocacy organisations – see section 7.3)
- Officials at local and national government levels (as discussed in section 7.2 and 7.4)
- Scientists and researchers(see later on in this section 7.6)
- Media (see section 7.7 below)
- Users of *dublinbikes* (as explored in the previous two chapters (5 and 6))

According to Geels and his use of the MLP, "these social groups interact and form networks with mutual dependencies, resulting in the alignment of activities... [and this] inter-group coordination is represented with the concept of sociotechnical regimes" (2007: 1414). I consider now, drawing on my empirical work, what – if any – examples of coordination emerged from my case study and I assess the significance of these. I turn first to Jason Frehill, the main official in the Council overseeing the implementation of the new system. According to Frehill (KI#2):

> [C]ertainly [the *dublinbikes* system] has given rise to more dialogue and interaction with other entities that deal with transportation... whether it be Irish Rail[227] or the RPA [Railway Procurement Agency][228] – we are dealing with them as part of the expansion of the programme and we are going to be providing bike stations in CIE[229] owned lands, at Heuston [rail] station – and there are 20,000 people alighting there on a daily basis... [T]hey would have contacted us to say, 'yes, we think [the *dublinbikes* are] a fantastic idea'... and they see the benefits from having that service available for their customers. We as the planning authority and as the transport authority... we want to see those multi-modal journeys occurring. And obviously, the NTA [National Transport Authority][230] have been hugely instrumental as part of this expansion programme. They are providing the funding for the capital costs... through the Department of Transport... for this service.

While one needs to be conscious that this is an uncritical and official narrative from a local government employee, there is a sense though that the public bikes have fostered the creation of additional or stronger linkages between the Council and a number of state agencies. This argument connects with wider discussions about the nature of transport integration that goes beyond technological integration (Potter and Skinner, 2000). To think about it another way, while Freund and Martin have argued that "auto-centred systems... do not abide competition [and] [i]n the United States, they have developed beyond dominance to exclusivity" (2009: 478), the public bike system appears to foster complementarity between other systems. It acts as a glue to link other (public transport) systems.

A further point here, and one that Geels also suggests (2012: 472), is that the participation of powerful actors (in this case, large scale transport companies) "add[s] legitimacy and bring[s] more resources" into niche areas – in this case, the niche of a public bike system. Moreover, as noted earlier, it was the Council's *Planning Department* – as opposed to their Traffic Department – that oversaw the development of the new mobility system so it appears that new linkages and

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[227] Irish Rail (or Iarnród Éireann) is the state-owned provider of passenger rail services. See: IRISH RAIL. 2014. *Company Information* [Online]. Available: http://www.irishrail.ie/about-us/company-information [Accessed 26/Sept 2014].

[228] The RPA is a state agency whose brief includes securing "the provision of, or to provide, such light railway and metro infrastructure as may be determined from time to time by the Minister for Transport" RAILWAY PROCUREMENT AGENCY. 2008. *Remit* [Online]. Available: http://www.rpa.ie/en/rpa/about/Pages/remit.aspx [Accessed 26/Sept 2014].

[229] Córas Iompair Éireann (CIÉ) is "Ireland's national public transport provider [which encompasses]... national, regional and local and urban services across Iarnród Éireann, Dublin Bus and Bus Éireann.": CIE. 2014. *CIÉ Group of Companies* [Online]. Available: http://www.cie.ie/ [Accessed 26/Sept 2014].

[230] The National Transport Authority is a State body set up under statute in 2009. It has a range of strategic planning and regulatory roles. See: NATIONAL TRANSPORT AUTHORITY. 2014a. *About the Authority* [Online]. Available: http://www.nationaltransport.ie/about-us/ [Accessed 26/Sept 2014].

working relationships were created internally within the Council between (at least) those two Departments[231]. Observing these newly emerging or shifting relationships brings to the fore Geels' other point that "[s]cholars who study transitions therefore emphasise lateral alignments, unexpected linkages, thresholds and tipping points" (2012: 474).

The above Council official opinions– regarding closer collaborations between the Council and other agencies through the introduction of the *dublinbikes* – appear to be supported by the evidence that the expansion plans for the city bike scheme are now being realised (see for example Kelly, 2013b). The other example of realignments, as discussed earlier, concerned the supportive position of advocacy groups with respect to Council policies – parties which previously would have had (and *do still have*) more antagonistic perspectives on, for example, high traffic capacity junctions (see for example Dublin Cycling Campaign, 2011a). This synergising is important according to Geels since, he argues, "[s]ystem changes are emergent outcomes of interactions between social groups with myopic views and differing interests" (2007: 1415). Other examples of (re-)alignments were suggested with Cllr. Montague's assertion that "bike shops [originally] weren't favourable to *dublinbikes* and now they are, and... bike rental [companies] weren't favourable and now they are. They don't see it as the threat they saw" (KI#4). These apparent shifts in views deserve further attention, as does Montague's anecdote that

> somebody in one of those [city centre] bike shops... said that he'd get three or four people... arrive in every day on a *dublinbike* and say, 'I want to buy a bike, I've been cycling on these *dublinbikes*'. They now have a better idea of what they want. 'These are the bits I like about the *dublinbikes* and this is the bit I don't like'.

The argument here is that there appears to be an alignment of interests, in this case, between the bike industry and the public bike providers – something that was not predicted.

What then of resistance to the system and the newly emerging regime? In commenting on the relationship between the taxi-regime and the public bikes expansion, Jason Frehill (KI#2) offered the following (sensitively expressed) reflections:

> The [taxi businesses] haven't seen it as a threat and they haven't voiced that to us... [T]hey go about their business and we go about our[s]... and there has been no dialogue from both parties in respect to the... service.... [W]e're very conscious that there's a lot of taxi men in the city who need to earn a living and as part of the expansion, we are not

[231] But possibly other departments such as Communications.

> going in stepping on people's toes and providing this service at taxi ranks so as to provide a *dublinbikes* station.

While many of my *dublinbiker* respondents raised, what they saw as, the dangers which taxi drivers (often hungry for business) posed to them (see Section 6.3.1 above), only one had begun to delve into the taxi driver's perspective:

> I had to get a taxi one day, it was absolutely lashing rain..... So the taxi driver passed by one of the *dublinbikes* and was giving out – feckin bikes – ruining out business'. No-one takes a taxi now. Maybe he is not too happy with it! (Int10, Peter, English, 50's, union employee)

There is a sense here that, at least potentially, *dublinbikes* and taxis may be competitors for short (say, 1-2km long) trips. Other researchers might wish to test this hypothesis particularly in the current taxi market in Dublin.

7.6.2 Techno-scientific knowledges

I argue here, tying in with my discussions in section 3.4.3, that the creation of the scheme brought new techno-scientific knowledges into the ambit of Local Authorities. Jason Frehill gave an insight into the Council's experiences:

> [T]he whole concept of a bike rental scheme and a Local Authority in Ireland designing and implementing [one]... [was] new territory for us. We had no experience in this area....[T]he [Council]... provided the individuals who came together collectively to design the scheme – it wasn't outsourced... [However]... J.C. Decaux's influence in this area was critically important... they formed part of the wider team in actually designing the scheme itself... [T]here were certain skill sets required... [and] we are still learning as we go... So you do need a bit of 'managed distribution' and 'forced distribution'... concepts that were very very new for us so we had to become familiar... and understand the dynamics behind those issues. (KI#2)

So, the new knowledge encompassed specialist thinking in regard positioning docking stations and distributing bikes in an optimal way, but more broadly, it encompassed the knowledge of how to embed a new technological system into pre-existing administrative, legal, electricity, broadband / ICT and financial socio-technical systems. Moreover the bodies of knowledge, firstly, of drafting

the initial contract with J.C. Decaux and, secondly, of renegotiating it for the scheme extension, were both new domains for the Council. According to Cllr. Montague (KI#4):

> [W]e didn't expect it to be as successful as it was, so we didn't expect that we would be expanding and so we didn't factor [this] in... when we negotiated the first deal. So negotiating the expansion was very difficult... [W]e are[now] telling other cities... starting from scratch... 'Be prepared, have expansion written into the contract'.

Marketing and legal skillsets

A further sphere of expertise which came to the fore– and, seemingly, for which a partnership with an outdoor advertising company (JCD) bore fruit for the Council – was that of marketing, as explained by Jason Frehill (KI#2):

> As Local Authorities, we are not hugely great at marketing projects... Marketing was critically important to how [the scheme] was positioned in the psyche of Dublin[ers]... It must be remembered at the time that the media attention [was]... quite negative...[I]t was foreseeing... [an] unsuccessful [scheme with the]... bikes... end[ing] up in the River Liffey or in the canals – and the scheme could potentially be stigmatized as a result of anti-social behaviour and vandalism... [W]hat transpired... with all [this] media attention... [was] to increase the awareness of *dublinbikes*... and as a direct result of that, more people began to use the service... [F]or instance, the launch of the scheme [was]... aired on the RTE news; it was in every newspaper, received huge levels of publicity and... captured the imagination... [W]e certainly would have learnt from [JCD]... how this whole thing was packaged and portrayed to the citizens of the city. And undoubtedly, this contributed to... the take-up of the service.

In short, the Council benefitted from the marketing muscle of the advertisers. In bicycle history terms, this resonates a little with developments in 1819 when carriage-maker Denis Johnson took the wooden *Draisienne* running machine and using his "professional understanding of design, manufacturing and marketing techniques" built his (wooden and later iron) *hobby-horses* in quantity and sold them on to "a leisured, novelty-seeking clientele: the sporty bucks of Regency London" (McGurn, 1999: 17-18). Then as now, the co-option of marketing know-how helped to make the new technology a success and, it seems, appealing to the better-off. The need for new skillsets resonates also with Geels' example of the transition to iron ships:

> The construction of iron ships required new skills... e.g. connecting iron plates together with rivets. Iron also required different process techniques, e.g. heating, hammering, flattening, and punching. Shipbuilders used to working with wood, possessed neither the required skills nor the machines to build with iron. Hence, the construction of iron ships depended on outsiders, iron workers and boiler makers (Smith, 1937). (2002: 1267)

Whereas in Geels' example the new skills related to engineering (taking over from physical crafts), with 3rd generation public bike systems the skills in demand relate to ICT, legal/technical knowledges of PPP contracts and marketing. All in all with the development of *dublinbikes*, new networks of people and new social capital were created – what we might call 'bridging capital' since the new relationships were spanning "different groups, linking heterogeneous groups together and providing a means of strengthening the larger society" (Wuthnow, 2002: 670). Having said that, it must be noted there was 'limited data' made available to the public[232] by the operator, JCD, according to Jason Frehill (KI#2)[233].

7.6.3 Research domains, R&D and knowledge spill-overs

I discussed in 2.3.5 above (and have referenced throughout the thesis) a range of academic work on the *dublinbikes* system (e.g. Murphy and Usher, 2013, Deegan, 2011, Murphy, 2010, O'Neill and Caulfield, 2012, Mooney et al., 2010). Further work includes that of Rogers and Keenan (2012) who produced a transport model to encompass an extension of *dublinbikes* into a new third level college campus. I argue now that the creation of the scheme shaped, to some degree, the research interests of mobility researchers in Ireland. While these researchers might well of course have studied PBSSs from abroad, there was a tangibility about having a new system on one's door-step.

Meanwhile, the research and development of (mobile) apps advanced with the launch of a new app by *Dublin Bikes 2 Go!* (Undated) and with students of TCD's *Idea Translation Lab* working to improve existing apps for the *dublinbikes* system (Science Gallery, 2012). It is unclear what impact such new apps have actually had on user practices in Dublin (or on the creation of new business enterprises) but, drawing on other related research (e.g. Line et al., 2011), it seems that such apps may both contribute to and compensate for unpredictability in activity scheduling.

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[232] And to myself as a researcher of the system.

[233] Although Frehill maintains that "that's going to change as part of the renegotiation of the contract. [We want]... access to data to become much more common place" (KI#2).

We might understand both of these examples as processes which are *the opposite* of what Freund and Martin describe when they discuss the ways that "auto technology" shunted previous technologies to the side and this forestalled "a parallel development of alternative technologies" (2009: 477). In other words, what may be happening at the moment – at least in an urban mobility context – is that the new technology (or socio-technical system) is precipitating new activity in mobility related social innovations. It remains to be seen if these ripples 'disrupt', or adjust in some way, the curricula for transport studies courses both in Ireland and beyond.

There is another argument (or, at least, germ of an idea) that emerges in response to thinking about the early history of motorbikes in Germany: Bauer argues that "motorcycles remained trapped in a very small market niche in which they were bought as 'adventure machines' predominantly by technophiles, sports enthusiasts and wealthy young men" (2013: 103). In the context of the rapid growth in the use of smart phones, and on the basis of informal observations of public bike users at stations, there would appear to be an argument that (3rd generation) public bicycles attract technophiles in the way that privately owned bicycles do not – or could this be explained by the demographics using the scheme? Future researchers might examine this idea.

Knowledge spill-over

While the concept of 'knowledge spillover' is normally applied in contexts where there is a "cluster of firms around a particular activity in a region" (Ryan and Giblin, 2012: 1325), I argue here that the public bikes may be contributing to technological knowledge spill-overs in a number of ways. According to Jason Frehill:

> there is a demand for instant information with respect to planning your journey and moving around the city and time is critically important, so... we are now working with the National Transport Authority [so] that *dublinbikes* is on its cycle journey planner... [W]e are also working with the[m] whereby *dublinbikes* will be integrated with the *Leap card* [the Irish equivalent of London's *Oyster card*] and I think that will be hugely important... So rather than having two cards in your wallet, you'll just have one card.

In regard to the *dublinbikes* feeding into the cycle journey planner (see National Transport Authority, 2013b), and to use the language of the MLP, shifts at the landscape level (within the cultural domain) are prompting mobile citizens to expect instant information; and then, as a window of opportunity opens up in the shifting technological / ICT regime (when the online cycle journey planner is being developed), this is seized thereby further embedding the public bike scheme into a shifting set of technology regimes. While there is no documentary evidence to

support Frehill's assertion that the *dublinbikes* card and *Leap* card could be (or are being) integrated, such a development would further embed the socio-technical system of PBSSs into the pre-existing and evolving orders. Another recent example of the PBSS shaping other technologies is with the pilot testing of a 'double-decker' truck used for bike redistribution - with a capacity of 30 rather than 18 bikes (J.C. Decaux and Dublin City Council, 2013b), – as shown in Figure 5.1. This might be understood as a further ripple effect (or cascade effect) of the expansion of the scheme.

7.6.4 System vulnerabilities and resilience

There is also, I argue, a parallel process to that of increasing technology integration and that is a trajectory towards an increase in the vulnerability of the public bike system. As discussed in Chapter 2, 3rd generation bike sharing systems are intimately bound up with electrical, digitally connected and highly financialised systems, *all of which are completely outside of the control of the individual user.*

A further dimension of this hyper-integration – i.e. integration with multiple large scale systems- is industrial relations issues around working conditions of staff employed by scheme operators. As a recent dispute in London demonstrated, this is a real rather than a purely hypothetical source of vulnerability for a system:

> Users of London's "Boris Bikes" faced disruption... after workers on the cycle-hire scheme began a 48-hour strike following a dispute with employers Serco Group over alleged poor working conditions. (Hamilton, 2013)

We might also note the vulnerabilities associated with the expansion of bike-share arising from bankruptcies of companies on which the new form of mobility is dependent. Chung reported that:

> the Montreal-based Public Bike Share Company, known as Bixi, which developed and manufactured the equipment that Alta's systems use, has disrupted the supply chain that numerous cities were pinning their expansion plans on. (2014)

Both of these examples serve to magnify the contrast between (3rd generation) bike schemes and the simplicity and resilience of individually-owned personal bicycles. The further point is that while the public bikes are in many ways - but certainly not all - *a democratised technology* in the sense of being available to most adults, they are not a resilient one in the face of any one of a number of potential wider systems failures.

7.7 Cycling numbers, profiles and discourses

I arrive now at the final main strand of this chapter. My concern here is with the broad concept of the culture of cycling in Dublin and with understanding how the *dublinbikes* intersected with what has been a recently rising tide of bicycle use in the capital. I consider also some of the wider discourses that, I will argue, have been shaped to some degree by the arrival of the new from of urban mobility. I start with a quick review of some secondary data on traffic and transport.

7.7.1 Cycling numbers

National level and comparing Irish cities

At a national level, the numbers commuting by bicycle decreased steadily from 1986 bottoming out in 2006 and then rising slightly in 2011 as shown in Census data (Table 7.1). Similarly, the modal share[234] for cycling commuting decreased from 7.25% in 1986 to 1.93% in 2006 before rising slightly to 2.19% in 2011.

Year	1986	1991	1996	2002	2006	2011
Bicycle Trips	146,962	130,194	99,008	57,842	53,960	61,177
Total Trips	2,026,881	2,083,385	2,236,335	2,501,635	2,794,225	2,794,133
Bicycle mode share (%)	7.25	6.25	4.43	2.31	1.93	2.19

Table 7.1 Absolute numbers aged 15 and over who used a bicycle as their main means of travel to work, school or college. (Central Statistics Office, 2012a: 37, Table 1)

However, and unsurprisingly, the modal shares for cycling in urban areas were far higher than for smaller towns and rural areas (Central Statistics Office, 2012a)[235]. Comparing 2006 and 2011 census data for trips to work by bicycle in our five largest cities[236] (details in Appendix 7.2), a number of trends are apparent:

[234] Note that when calculating the modal share, I have not excluded those who work from home in the denominator. I.e. if one was to exclude those who worked at home, the modal share for all modes would rise slightly.

[235] In smaller towns (i.e. those with a population greater than 1500 persons but excluding Dublin, Cork, Galway, Limerick and Waterford) only 1.5 per cent cycled to work while only 0.5 per cent cycled to work in the aggregate rural area. Page 11 of: CENTRAL STATISTICS OFFICE 2012a. Census 2011 Profile 10 Door to Door – Commuting in Ireland: Statistical Tables and Appendices. Dublin, Ireland: Stationery Office.

[236] Strictly speaking, it is the combined City and County figures that are presented here for each city. See Appendix 7.2. Overall however, my main argument stands that it is Dublin that has witnessed the greater rise in cycling numbers compared to other cities in Ireland.

- In each of Limerick, Waterford and Galway, both absolute cycling numbers and the modal share of cycling decreased slightly over the 5 year period.
- In Cork both absolute cycling numbers and the modal share of cycling increased slightly (with the share increasing from 0.95 to 1.14, i.e. by 17%)
- In Dublin both absolute cycling numbers and the modal share of cycling increased moderately (with the share increasing from 3.77 to 5.03, i.e. by 25%) over the same period.

Dublin City – trips into the 'canal cordon'

Separate from the census, there is an annual traffic count that is recorded at the canal cordon boundary (which essentially translates as the boundary for the inner city of Dublin - shown graphically in Appendix 7.3)[237]. In Figure 7.5 below, I have plotted the data for cycling movements for the years 2003 - 2013[238]. The data shows that:

> Over the 10-year period 2003 to 2013, the volume of inbound pedal cyclists crossing the canal cordon during the morning peak increased by 92.3%. There was a 47.5% increase in the 5-year period from 2008 to 2013 and a 14% increase from 2012 to 2013. (Dublin City Council, 2014c: 1)

The canal cordon counts show average growth rate of approx. 8% for the (five year) period Nov 2008 to Nov 2013. These figures generally *will not* include *dublinbikes* journeys because the cordon lies just outside the locations of all *dublinbikes* stations, and at morning peak *dublinbikes* journeys are mainly inbound.

[237] Since 1980, Dublin City Council has been conducting annual traffic counts in November each year for all modes of traffic at 33 locations around the cordon formed by the Royal and Grand Canals. Since 1997 the counts have been conducted from 7.00 to 10.00 am. DUBLIN CITY COUNCIL 2014c. Dublin City Council's Canal Cordon Count 2013 – Cycling Summary. Dublin City Council.

[238] The raw data, year on year change, and percentage change over the previous year are shown in Appendix 7.4.

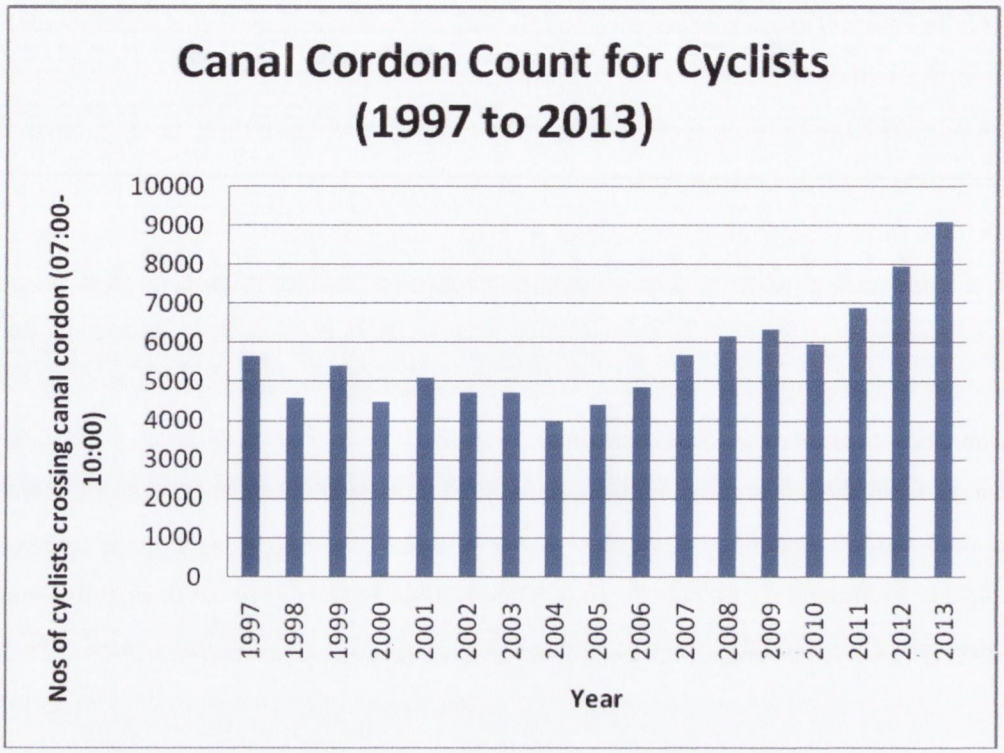

Figure 7.5– Canal Cordon counts[239]

City centre movements and comparing datasets

A separate (Dublin City City Council commissioned) dataset records daytime traffic volumes at approximately 30 *city centre locations* (shown in Appendix 7.5). The data for bicycle movements at these locations over the years 2008 to 2013 are shown in Appendix 7.6. Overall, the *city centre data* shows a steady increase over the period May 2009 to May 2013: the average growth in cycling numbers over the (four year) period 2009 to 2013 was +16%[240]. These figures will include cross city *dublinbikes* journeys.

Both of the above datasets record an increase in the number of bicycles passing count points over the period 2009 to 2013. While there are a number of irresolvable difficulties in interpreting and comparing trends of the two datasets, the broad picture is one in which it would appear that there is a greater increase in the city centre cycling movements than those on the periphery. Given the arrival of the public bikes and their associated city centre / cross-city movements, this is not a surprising finding.

[239] Data derived from: DUBLIN CITY COUNCIL 2013c. Dublin City Council's Canal Cordon Count 2012 – Cycling Summary. And DUBLIN CITY COUNCIL 2014c. Dublin City Council's Canal Cordon Count 2013 – Cycling Summary. Dublin City Council.

[240] See Appendix 7.7 for the data analysis and commentary.

7.7.2 Profiles of cyclists

A recent analysis by Caulfield (2014) comparing the demographic profiles of cyclists in 2011 as against 2006 yielded the following results for Dublin[241]:

- Of the cycling commuters in Dublin in 2011, 28% were female compared with 23% in 2006[242]
- Of the cycling commuters in Dublin in 2011, only 6% were in the 15-24 age bracket, compared with 13% in 2006; while for the 35-44 age band, 29% were in this band in 2011 as against 23% in 2006.
- As regards the socio-economic groupings[243] of cyclists, these are shown in Table 7.2, again drawn from Caulfield's analysis. While those figures do not control for distance, we can see a broad trend towards more commuting cyclists coming from the higher socio-economic groups in 2011 compared with 2006. Caulfield's further analysis (using a multinomial logit model) showed that "those living in areas with an increase in cycling are marginally more likely to be individuals in the higher socio-economic groups such as employers and managers and higher and lower professionals" (2014: 225).

	2011 (%)	2006 (%)
Employers and managers	16	12
Higher professional	17	5
Lower professional	20	16
Non-manual	22	22
Manual skilled	6	11
Semi-skilled	10	13
Unskilled	3	5

Table 7.2 – The changing demographics of Dublin cyclists: socio-economic groups (Caulfield, 2014: 224)

[241] Caulfield examines the County of Dublin (population 1.2 million) which includes Dublin City and the three other local authorities of Dun Laoghaire Rathdown County, South Dublin County and Fingal County. Some of the outer counties (especially Fingal) are quite rural in nature.

[242] Note that in Caulfield's paper (Table 4, page 224), the above percentages (28% and 23%) for Dublin commuters have been mistakenly provided *for male cyclists* when it should have been female cyclists. Compare with the columns for: Cork which correctly show that of the total of cycling commuters, females account for 24% (2011) and 21% (2006); and for Galway which correctly show that of the total of cycling commuters females account for 32% (2011) and 27% (2006).

[243] The other groups not shown in the table (and equivalent percentages shown for 2011 and 2006 respectively are) are: 'own account workers' (1% and 1%), 'farmers' (0% and 0%), 'agricultural workers' (0% and 0%) and 'all other' (3% and 5%).

Overall, the most recent census in 2011 shows that 64% of Dublin (County)'s cyclists resided in the City with only 36% living in the three outer counties of Dun Laoghaire Rathdown, South Dublin and Fingal combined (Central Statistics Office, 2012a: 40, Table 3). Furthermore, we can see from Caulfield's analysis that cycling growth has mainly occurred in areas close to the city centre "and many areas have seen little or no growth in cycling and some areas have seen a substantial decline in cycling" (2014: 221).

In short, Dublin's cyclists disproportionately live close to the city centre, are male and are in the higher socio-economic groups.

7.7.3 Profiles of *dublinbikers*

Janette Sadik-Khan, Transport Commissioner for New York City, has argued in relation to NYC bike-share users that they represent a demographically diverse population (TED, 2013) compared to 'other cyclists'. Can we say the same about *dublinbikers*?

While we know from Murphy and Usher's work that "the majority of [*dublinbiker*] respondents (58.8%) are between the ages of 25–36 with 22.6% falling into the 37–48 cohort and only 4.8% in the 48+ cohort" and that the scheme "has a relatively affluent user profile i.e. middle and higher income earners" (2013: 14), it has not been possible to directly compare public biking versus 'ordinary biking' datasets. First of all, census (commuting) data does not differentiate between trips on *dublinbikes* versus those on non-*dublinbikes*. In other studies such as Maher et al. (2013), different age bands are used (and different methodologies employed to gather data), so at this point it is not possible to show from published datasets if *dublinbikers* are a more or less diverse population than ordinary Dublin cyclists.

Incidentally, just two years into the Parisian *Velib'* scheme, Hugues, writing in Le Figaro, described "l'image 'bobo[244]'" that the bikes had already developed (2009) which (at least partly) explained why so much vandalism of the French bikes had taken place. Quoting Sébastian Roché, he argued that the vandalism of the public bikes echoed the defacing or scratching of the expensive cars of the rich: "C'est un peucomme les 4x4 ou les Mercedes quel'on raye pour s'enprendre aux plus riches, analyse le sociologue Sébastian Roché, directeur du pôle «sécurité et société» au CNRS de Grenoble" (ibid.).

While I argued in Chapter 5 that those without bank accounts are excluded from the Dublin

[244] Bohemian-bourgeois from: BROOKS, D. 2000. *Bobos in Paradise: The New Upper Class and How They Got There*, Simon & Schuster.

scheme, and Murphy and Usher argue that users are more affluent than the average worker, there has been little or no vandalism of the bikes in Dublin. While it is difficult to interpret the reasons for this, it does seem that the public bikes in Dublin are seen as less BoBo than in Paris or else that there is less class antagonism in Dublin. While it is not possible to tell from pre-existing datasets if *dublinbikers* are more demographically diverse than non-*dublinbiking* urban cyclists (in Dublin), my own ethnographic work generated some ideas on possible differences between groups, as discussed below. We must bear in mind here of course that many *dublinbikers*[245] also have their own bicycles.

The 'democratization of cycling'?

Several of my respondents discussed the class dimensions of being a public biker. Pawel from Poland was struck by the number of legal professionals using *dublinbikes*, as were a couple of other respondents. He commented that

> I know quite a few barristers who switched to them – solicitors and barristers who use them from the office to Four Courts. There are a few [docking] stations around Four Courts... [T]o me they are, they have a very democratising influence... [i.e.] different backgrounds use the same stuff together. Yes, same stations but very different places around those stations. It's a very democratic means of transport as opposed to cars versus buses... [T]hey aren't posh, they are plebaic, they're for everyone – which is great. I do like that about them.
>
> [D] And do you think the solicitors or barristers, would they previously have used their own bicycles?
>
> No, I know of a few and well the ones I know they didn't. The one I know he switched to the bikes after he was driving, he used to drive, he switched to the bike after they were introduced. (Int12, Pawel, Polish, 30s, legal secretary)

Fionn elaborated a little on what he perceived to be a strong middle class bias amongst *dublinbikers*:

> I would say the people using them are predominantly... middle class... whatever...[that] means anymore – they dress a certain way, we have a job... You are not seeing – I have to choose my words carefully, you know what I mean... You need a credit card, don't you, to

[245] We do not know exactly how many or what proportion. We must remember that some own bicycles but live outside of Dublin city or, in some cases, in satellite towns at least 25km away. Others used to own bicycles until they were (recently) stolen. The point here is that one cannot expect to find a sharp difference in the profiles of *dublinbikers* as against *non-dublinbiking* urban cyclists in Dublin.

sign up? You need some form of bank details? ... So that is definitely, in my view, a barrier to entry for a certain class of person... There is a whole strata of people who do not have credit cards. So you never see a *certain type of person* on a *dublinbike*.

[D] Is it also the case that the use of bikes in general in Dublin is slightly middle class oriented?

I don't think so, no. Because the other people who – 16 year old guys, not in school, not in work, they use bikes, drug-dealers use bikes – I don't know where they get the bikes, Certainly in my part of town, over on the northside, those guys are on bikes. Guys more than girls, actually. I don't think your average working class girl is on a bike. (Int30, Fionn, 30s, digital media SME person)

A further perception amongst a small number of respondents was that there were more older citizens on *dublinbikes* than on non-*dublinbikes*:

> I have seen some – not many... elderly people using *dublinbikes* and whether or not they are using it for exercise, [I don't know]... I don't see many elderly people cycling around Dublin on their own bikes. I'm more likely to see it on *dublinbikes* than private bikes. (Int25, Neil, Scottish, 40s, professional)

'Uncool' users?

Neil's comments, echoing with some ("coolness") elements of Florida's 'bohemian index' (2002), focused in on those who one would not expect to see on *dublinbikes*:

> [Y]ou won't see... what some people might call a serious cyclist or... a fashion dressed cyclist ... a cycle delivery person on a *dublinbike* – which would be more instantly recognisable... to me than being *averagely dressed*. So say, 'I'm not wearing a Cyclone [couriers] delivery bag. I'm not wearing a cool peaked hat and sun glasses. And I don't have my trousers going down to my knees... with the cool footwear' so there is a profile difference there between some categories of non-*dublinbikers* users versus *dublinbikes* users. (Int25, Neil, Scottish, 40s, professional)

With the 'coolness' dimension raised by Neil in mind, but as a slight aside, while none of my respondents raised the issue - since it is a very recent development (July of 2014 (J.C. Decaux and Dublin City Council, 2014b)) - a brand new dimension to being a *dublinbiker* is to concede to being a mobile advertisement for *Coca-Cola Zero* with the new bike branding now in place. While this represents a further step in the corporatization of the public bike concept as explored in Chapter

2, perhaps in the future it could lead to those with more anti-corporate principles or those with a *cooler* bent to desist from subscribing to the scheme[246] - a topic for future research perhaps.

To conclude here, while there is an absence of 'comparable hard data' for *dublinbikers* and 'other cyclists' – and indeed my other findings suggest a blurring between these categories – ethnographic data strongly suggests there are demographics which are completely absent from the scheme. These findings tally with my previous discussions on exclusions arising from the bank account barriers. To revisit an earlier metaphor, it seems then that the ripples created by the new socio-technical system have not been felt by everyone – and perhaps also there may be some who may not want to be connected with them.

7.7.4 Corporate identities resonating with *dublinbikes*

There are definitely though commercial companies who wish to be associated with the bikes directly or indirectly. A recent development has been for some companies to lean on the *dublinbikes* in order to promote their own (non-bicycle) products. I discuss two examples here.

There is undoubtedly a conceptual equivalence between a car-sharing business on the one hand and bike-sharing on the other – hence, it is assumed, the use by *Go Car Ireland* of the *dublinbikes* in a recent online advertisement as shown in Figure 7.6 below. With both concepts, the thinking is to move from an ownership (or traditional business) model to a use-only model as discussed earlier (at the end of section 7.2.1).

Figure 7.6 – Online advertisement by GoCar Ireland (2013)

[246] Conversely of course, some or even many may see such a brand as being 'cool' and may then be more inclined to use the machines.

In another corporate online promotion, *Vodaphone Ireland* used the public bikes as the locus of their advertising efforts. The initiative appeared to be based around entwining the public bikes with decorations of the same colour as the corporate brand - and then tweeting about it (Figure 7.7 below). Once again, we can identify multiple conceptual links between (mobile / smart) public bikes and (mobile / smart) phones. The bikes appear to resonate with the 'mobile' corporate identity and appear to be seen as 'cool' and 'urban' from a marketing angle.

Figure 7.7 – Online promotional initiative by Vodaphone Ireland (2012)

Both examples suggest a willingness amongst 'mobile' (meant in its broadest sense) corporates to be associated with the public bikes (and their largely urban, middle-class users) and to seek to leverage the scheme's success for their own advantages.

7.7.5 Institutional normalisations of the public bikes concept

Moving away from corporate identities, I consider here the extent to which corporate or institutional knowledges, as expressed through the very mundane '*Find us*' / '*Directions*' information pages of their websites, encompass an awareness of the *dublinbikes* system as compared with transport systems and modes of more traditional types. I considered two types of institutions: national cultural institutions and 3rd level educational institutions.

First though, I refer to some other examples to illustrate my argument. From a state and semi-state perspective, there is evidence to suggest that the *dublinbikes* were used as an integral (public relations) tool during the Irish presidency of the EU. Barry, writing in The Journal.ie, reports that "[a]ll delegates to official Presidency events in Dublin will receive a Dublin Bikes card, which is to encourage them to use the bikes" (2012). It is not at all clear how often - if indeed at all - the bikes were used by delegates at Presidency events, but the point here is that the public bike system appears to have been perceived as being sufficiently mainstream or prestigious (or

novel) so as to be suitable for official use in events linked to the Irish Presidency of the EU. The bikes presented the right image. This ties in with and supports (part of) Beroud and Anaya's argument that

> Politicians [in France] have found public bicycle schemes to be very good for creating a dynamic, young, environmentally friendly image for the city and the presence of the scheme is a continuous and visible reminder to their electors of their investments and actions." (2012: 282)

My next example is also an event – albeit for one day only as opposed to a six month event. *Culture Night* 2013 was co-ordinated by a cultural trust and supported by the Department of Arts, Heritage and the Gaeltacht (Temple Bar Cultural Trust, 2013a). On the 'Transport' page of the website, the strapline read "Bus it, Tram it and Bike it on Culture night", and sub-headings read "Dublin by Bus", "Dublin by Tram" and "Dublin by Bike". The details beneath the last heading read:

> Don't forget you can also cycle from one cultural destination to the next. All stations are distributed in close proximity to each other in Dublin City Centre, so you are never far away from renting or returning a Dublin Bike. Visit www.dublinbikes.ie for more info. (Temple Bar Cultural Trust, 2013b)

See Appendix 7.8 showing a screen shot of the online add. Furthermore the *Arena* arts programme on RTE1 radio hosted a live *Culture Night Special* covering the events in Dublin and interviewed members of the public as they visited various cultural institutions on *dublinbikes*[247]. These (mainstream) examples suggest that the public bike was perceived to be as legitimate a way for EU delegates or night-time 'culture vultures' to move about as other more traditional modes are. The bikes are being normalised officially.

Taking a more systematic approach[248], of the twelve National Cultural Institutions located in the centre of Dublin - as listed by the Council of National Cultural Institutions (Undated) (as shown in Appendix 7.9) - five referred to the *dublinbikes* in the directions of how to locate the premises / "how to find us". Since three of the twelve did not mention any modes at all, it follows that *five out of the nine* National Cultural Institutions which did mention transport modes within their

[247] Note that the podcast is no longer on RTE website. I sought a copy of it from RTE (Raidió Teilifís Éireann) but without receiving a reply.

[248] Note that the search was conducted in November 2013.

online directions, mentioned Dublin Bikes. A table capturing the relevant details and analysis is provided in Appendix 7.10.

The evidence in regard to *educational institutions* providing information on *dublinbikes* on their transport / directions / "Find-us" webpages is also mixed. Of the fifteen 3rd Level Colleges located in the centre of Dublin – derived primarily but not exclusively from a list produced by the Central Applications Office Ltd. (Universities and other Higher Education Institutions) (2013)[249] – just three referred to *dublinbikes* in their directions. Since four of the fifteen institutions did not mention any modes at all, it follows that *three out of the eleven* institutions which did mention modes of transport within the directions section, mentioned the public bikes. A table capturing the relevant details and analysis is provided in Appendix 7.11.

Both of these examples suggest that the new system is embedding itself *to some extent* within the organisational culture of the institutions examined. The idea that patrons, staff and students of those institutions might consider travelling there on public bicycles is becoming normalised to some degree. For a system that is in operation for just four years[250], it appears to have reached a reasonable degree of penetration into the organisational systems of these institutions. It would be interesting to conduct similar exercises on institutions (e.g. boxing clubs?) which would be perceived to be less 'middle class' so as to assess the wider penetration and permeation of the concept.

7.7.6 Media and popular representations of public bicycle users

Furness, in his social and political history of bicycling, posits that cycling has been systematically devalued and denigrated in the American media for decades and

> [t]he habitual mischaracterisation of utilitarian cycling, urban cyclists, and bicycle transportation in mass media is part of a larger process whereby the cultural supremacy of automobility is perpetually conferred through the norms of journalism and the pop culture narrative of the infallible car (2010: 138).

Can we say the same about (bi-)cycling in Ireland? And, crucially, has there been any shift in how 'cyclists' (or 'people on bicycles') have been represented in the Irish media since the introduction

[249] Added to the Central Applications Office Ltd. list were (i) Dublin Institute of Technology (DIT) and (ii) Science Gallery since both can be considered important educational institutions. Note however that both of these institutions include the public bikes in their directions, so the adding of these two institutions does skew the results somewhat.

[250] The system was four years old when conducting that exercise. It is now (in September 2014) five years old.

of the public bikes? Have discourses around cyclists and cycling changed in Dublin in the last five years - or conversely as Furness puts it, has any "political reading of bicycling as environmentally sustainable, efficient, or cheap" been totally erased "[b]ecause to show it any other way could potentially legitimize a critique of automobility"(2010: 139)? This is clearly a vast topic even if one was to examine just one Irish media type - print, radio, television or the online sphere – or even, for example, just one publication (or weekend supplement within one paper) in the print media stream. At this stage, I am mainly raising these questions so that they might be pursued in future research on public bikes, as discussed in the Conclusions chapter.

One example I did examine was Ireland's version of *The Apprentice,* a TV programme in which ambitious young business people compete to 'get to the top'. The opening sequence interwove shots of the suited contestants with a stream of images suggesting (high) status, prestige and wealth (see TheApprenticeIE, 2010). The inclusions of a Porsche car, rising escalators and lifts in ultra-modern commercial buildings in the (gentrified / sub-urbanised / re-urbanised (Butler, 2007)) docklands was to be expected; but the female contestant powering along on a *dublinbike*, with designer hand-bag in basket, may have come as more of a surprise to viewers (Appendix 7.12). Could it be the case that the *dublinbike* is not only entering the mainstream but is now also synonymous with upward mobility?

A further comment on the mainstream media coverage of the public bikes story relates to what appears to be have been a frequent stream of positive (press-release generated?) stories on the scheme. So for every 'millionth *dublinbike* ride taken' (e.g. Murphy, 2013a) or each new birthday of the scheme (e.g. O'Carroll, 2011) or each time new docking stations were opened or announcements made about (possible) extension plans (e.g. Murphy, 2012), the media carried stories. In MLP framework terms, my point here is that as the new socio-technical system bedded into place, its stabilisation (and hence success) appears to have been facilitated by a symbiotic relationship between the issuers of press releases (the Council and / or JCD[251] - the scheme promoters) and the recipients of the press releases (the media). This argument connects with wider debates about the media framing or presentation of issues in response to corporate pressure (Schnell, 2001). Further still, since we might reasonably assume that many head offices of newspapers are located in the city centre, then it follows that the public bikes would be very visible to journalists and other employees of such media outlets (Figure 7.8).

[251] It is noteworthy that the promoters of the scheme, J.C.Decaux, "became the number one outdoor advertising company in the world" in 2010 and "[i]n 2010, the Group's revenue increased by 22.5% to €2,350.0 million." J.C. DECAUX 2011. 2010 Annual report, ibid. One might reasonably assume that a company which is the world's largest outdoor advertising company is also adept at working with the media to ensure that its products receive adequate coverage.

Figure 7.8 - Irish Times offices on Townsend Street, April 2011

Any suggestion though that there may have been a radical shift towards positively and consistently characterising (public) bikes in the media at the expense of motorised individualised transport needs to be put in the context of the very large sums spent by the motor industry on advertising each year. For example, €21.3M was spent on car advertising in Ireland in 2010 alone (Nielsen (Advertising Intelligence Services), 2011). The dominant paradigm of automobility is not (yet) at risk.

7.8 Chapter conclusions

I present here the conclusions from my 'systems' investigations around the dublinbikes scheme – firstly (in section 7.8.1), those relating to my empirical evidence, and secondly (in section 7.8.2) those discussing the strengths and limitations of the Multi-Level Perspective (MLP) conceptual framework.

7.8.1 Counterfactuals and the spectrum of strength of supporting evidence

My overarching argument is that as the new socio-technical system embedded itself into Irish society, it intersected with and reconfigured many domains over and above those traditionally considered by transport researchers. At this point, I use a counterfactual analysis so as to bring to

the surface those shifts which can be linked most closely to the introduction of the scheme. While scholars disagree on the value of conducting counterfactual analyses (for a brief discussion see Capoccia and Kelemen, 2007: 355), I reflect here on my findings and consider what would seem likely to have ensued (or not) in the counterfactual scenarios of if, for example, Cllr. Montague had not opted to prioritise the public bikes at the time of the 2004 local elections, and / or if the City's Planning Department had not gone out "for a public amenities contract in 2005 [and] decided to include a public bike rental scheme as part of that initiative", as Jason Frehill (KI#2) put it. Following the structure and domains discussed in the main body of this chapter, I posit the following:

First of all, Cllr. Montague (KI#4) maintains that the bikes made it "easier for me to argue the 30km" issue and that the support of the advocacy group, which appears to have been re-energised and refocused to some extent after the introduction of *dublinbikes*, "was crucial at the time". Therefore it seems less likely that the 30km/h speed limit would have been introduced and retained in the above 'what if' scenario.

Secondly, the introduction and, more importantly perhaps, the success of the public bike scheme inspired (new) lobbyists in other cities to demand equivalent schemes and this campaigning work, allied with (inter alia) shifts in how politicians (and corporates willing to sponsor schemes) were viewing cycling, appears to have contributed to decisions to introduce schemes in Galway, Cork and Limerick. Without the *dublinbikes* scheme, it would seem far less likely that the technology would be diffusing to the other cities (processes which are playing out at the moment (National Transport Authority, 2014d)).

Thirdly, under the counterfactual scenario described above, it would seem more difficult to imagine: (i) the Grand Canal Cycleway being constructed (or at least so soon); and (ii) it being used as much as it is by as diverse an array of users (Seymour and O'Mahony, 2014) including so many dublinbikers (as suggested by my respondents). The popularity of the *dublinbikes*, with each bike being used on average 8.39 times daily (Ginty, 2013c), appears to have made it easier for decision-makers to invest public funds in such infrastructure and to remove the "270 pay and display [car parking] spaces" along this corridor (Dublin City Council, 2010d: 2). Furthermore, without *dublinbikes* and the now expanded system encompassing Heuston rail station, there would be less pressure on the Council to proceed with the development of a dedicated cycle route along the river quays (the *P2P*), aimed particularly at more novice cyclists (as is now being advanced through the (pre-)planning process). In essence, the Council now has more ownership

over cycling - and literally ownership over the means of transport, the fleet of bicycles – and hence responsibility for it.

Forth, crucially under the counterfactual scenario, I would argue that the alignment of and cooperation between diverse actors (City Council plus outdoor advertising company plus the cycling advocacy group plus the public transport operators) would not have occurred to the same extent. Furthermore, the Council's ability to draw on, inter alia, the marketing expertise of the advertising company allowed for a more effective promotion of cycling and the new system. This is a skillset which, according to one of my key informants, is not otherwise found in local government in anything like the ways it is found in the corporate sector. This would appear to have facilitated generating much positive media comment.

Fifth, again under the scenario described above, it would seem far less likely that students of engineering or technology would have invested their time either in creating apps related to the *dublinbikes* or have advanced other research projects on public-biking.

Capoccia and Kelemen refer to "the important role of well-constructed counterfactuals in assessing the causal impact of specific factors on historical outcomes" but stress the need for caution and clarity in the use of counterfactuals. They point to the wider literature on this form of analysis that "has elaborated logical and methodological rules for assessing the plausibility of a counterfactual argument, differentiating counterfactuals with good heuristic value from those that belong to the thought-provoking but insufficiently rigorous realm of 'virtual history'" (2007: 355-356). They conclude that "[o]nly by taking counterfactual analysis seriously can contingency be studied" (2007: 368). My arguments above appear to respect the main criteria that Capoccia and Kelemen highlight – the 'theoretical consistency' criterion[252] and the 'minimal re-write rule'[253] - thus permitting some initial informed speculations on what might have ensued without the decision to proceed with the *dublinbikes* in the mid-2000's. I am very conscious however that the socio-technical system of the public bike sits within a complex wider system and most shifts appear to occur within a 'web of causation': these are not mono-causal shifts.

[252] I.e. 'analysts should focus on "a counterfactual antecedent that was actually available during a critical juncture period, and that, according to theory, should have been adopted."' – page 356 of CAPOCCIA, G. & KELEMEN, R. D. 2007. The Study of Critical Junctures: Theory, Narrative, and Counterfactuals in Historical Institutionalism. *World Politics,* 59, 341-69.

[253] I.e. counterfactual speculations should be constrained by, for example, "considering only policy options that were available, considered, and narrowly defeated by the relevant actors or by ruling out counterfactuals in which the antecedent and the consequent are separated by such wide stretches of time that it is implausible that all other things would remain equal." (reference as previous).

I contend though that my evidence strongly suggests the argument that the arrival of a new technology and socio-technical system applied further weight behind tentatively emerging, yet very slow-moving, policy shifts towards particular policy measures such as the introduction of the 30km/h speed limit. My argument supports therefore to a considerable degree that of Beroud and Anaya who hold that the

> presence of public bicycles in the streets contributes to the visibility of cycling and cyclists and this helps to enhance the perceived 'legitimacy' of cycling which may also lead then, for example, to reduced motor traffic speeds creating an even more appropriate environment for more general, non-public bicycle scheme-related cycling. (2012: 297).

While it is very difficult to pin down exact changes in the 'perceived legitimacy' of cycling, I argue that one good proxy is the number of people cycling and in recent years this has risen more steadily in Dublin compared to other Irish cities as demonstrated in this chapter. While it would appear to be rising for a number of distinct reasons (Caulfield, 2014) and it is extremely difficult to disentangle those reasons (see for example Mullan's (2012) study examining the phenomenon of leisure cyclists 'swapping lycra for a suit'), I argue here that empirical evidence supports a position that the public bikes are contributing considerably to the increased normalisation of cycling in Dublin city through a multiplicity of sometimes subtle and sometimes self-reinforcing processes. And as argued above, for some strands of the overarching argument, the evidence for a causal link with the arrival of the *dublinbikes* is strong and almost irrefutable - the cascades of linkages are documentable/documented; for other strands, the links between the *dublinbikes* and other observed shifts are less clear cut but at least plausible to support a causal link; for other dimensions still, the evidence is weaker (and/or the links in the chain or the 'web of causation' are less clear cut). Further research may succeed in clarifying these (complex) linkages.

7.8.2 Multi-level perspective – strengths and weaknesses?

I argue here that the MLP framework offers a number of strengths for this type of exploratory research. I note also some of the limitations of the theory.

Holistic framework

The MLP approach supported a synthesising of an array of domains (dimensions) and processes, that were both very diverse in nature and of an unknown scope and type (prior to my investigations), within an overarching conceptual framework that has been used by Geels (in particular) to analyse a number of (very diverse) historical processes. I argue here that the MLP assists in taking a holistic approach to understanding what processes appear to be at work as a

new socio-technical system beds in. In Figure 7.9 below I have adapted Geels' schematic used in his paper introducing the MLP into transport studies (2012: 474). My argument here supports Whitmarsh who holds that:

> MLP research, with its multidisciplinary, long-term and systemic approach, appears better able than much traditional innovation and transport analysis to identify these unintended consequences and feedbacks, and to highlight the diversity of processes and actors involved in social change... (2012: 485)

Conceptual tool box

The MLP framework comes with a large box of conceptual tools and a lexicon which, I argue, helps to shine a light on the various processes which appear to be occurring in my case study city.

The concept of the *landscape level*, the top level of the three in the model, is useful in that it helps somewhat in differentiating the background (exogenous context) processes – those which are most difficult to shift, from those at the *regime level* (and *niche level*). In regard to the public bikes landing into Dublin, I argued that these landscape developments included the growth (globally) of ICT and a shift in the transport planning paradigm (as per Section 7.2.1 above). While the landscape level is the most 'immutable' layer, we might think of the development of public bike 'apps' as permeating this layer at least a little and thus feeding into a deeper macro-level shift towards "a high tech digital future" (see Chapter 9 of Urry, 2013).

The concept of *feedback loops,* used liberally in the MLP, appears to apply well to the linked processes within and between advocacy, politics and policy change, as explored in Section 7.3 above. It seems helpful to think about positive (or reinforcing) feedback loops between the arrival of the *dublinbikes* and the introduction (and retention) of the 30km/h speed limits[254]. Linked to this concept are those of *cascade effects*, *system momentum* and the *lock-in* of a system (UrbanAge, 2013). A further concept integral to the MLP framework is that of the *reconfiguration or transition pathway*.

[254] Conversely, we can imagine media stories around 'reckless cyclists on *dublinbikes*' endangering themselves and others feeding into decisions by the travelling public to choose to use taxis, thus increasing (cyclist-hostile) taxi movements on the streets that lead to reduced use of *dublinbikes*. However, the data does not appear to support such a feedback loop.

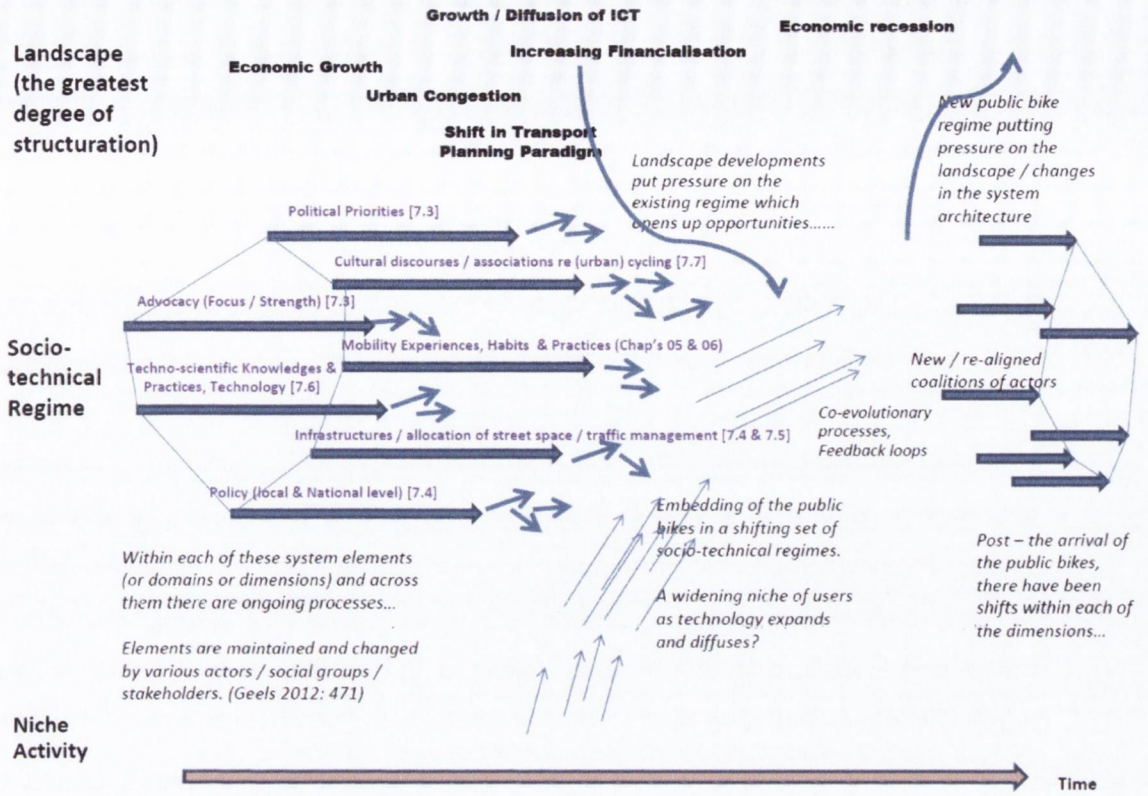

Figure 7.9 – MLP framework applied to dublinbikes – adapted from Geels (2012: 474). Note:

- ***The three levels identified: landscape / macro level, regime level and niche level***
- ***The thick blue horizontal arrows (on the left) represent the (dynamic) state of a number of dimensions before the arrival of dublinbikes***
- ***The shorter thick blue arrows to the right of the longer ones suggest some sort of a disruption to the (dynamic) state of those dimensions***
- ***The thick blue horizontal arrows on the far right aim to represent the dimensions post the arrival of dublinbikes.***

According to Geels, in his case study of the transition in the music system, the

> transition path does not consist of 'new replacing old', but of new being incorporated in the old, leading to new combinations and configurations. New innovations are developed in niches, and subsequently adopted in the regime... [thus triggering] further reconfigurations... [T]he adoption of television meant that radio changed its place in the household (moving to bedrooms, kitchens, garages), which altered listening practices of teenagers. Likewise, the transistor radio contributed to new listening practices, which facilitated the articulation of new music tastes. The emergence of television also contributed to changes in firm strategies, from radio to television, thus creating space for local radio... The case study was full of such intricate causal chains, where new technologies triggered new behaviour, which opened up new markets, which created

> space for new music styles and new technologies, etc. Such socio-technical 'leapfrog dynamics' are important in reconfiguration processes. Over time, they may lead to major system changes that were unforeseen and unintended at the start. So, the conclusion is that the music transition followed a reconfiguration path rather than a technological substitution path. (2007: 1429)

Amongst other effects, I argue that the public bikes are adding to the mixture of mobility options that urban dwellers have (and especially city centre dwellers) – rather than replacing any other technology outright. Moreover, the new behaviours triggered by the *dublinbikes* generate their own (micro-) cascade effects. This could include, for example, changing the accessibility (and hence viability?) of some centre city shops by those who work just outside the centre (i.e. beyond walking distance) but who have commuted (to work) by means other than the bicycle[255].

Previous MLP-based case studies have discussed the stability of pre-existing socio-technical regimes. Again, according to Geels:

> Transitions do not come about easily, because sociotechnical regimes are stabilised in many ways. Established roles, routines, ways of thinking and ways of doing contribute to stabilisation as well as legally binding contracts. Favourable institutional arrangements and formal regulations may have been created, and accompanying infrastructures are set up. Other stabilising elements are social relationships, mutual role expectations and the organizational commitments and vested interests of existing organizations. So, for many reasons, existing sociotechnical regimes are characterised by stability and path dependence. (2007: 1414)

Does it make sense to think about the stabilizing nature of the pre-existing regime[256] in my case study? A few possible forces or processes spring to mind here – ones which appear to have helped maintain an auto-dominated road environment. One example could be the liberalisation of the taxi market in 2000 (Barrett, 2010), and the subsequent sharp increase in circulating taxis on the city centre streets seeking fares (or empty ranks (Kelly, 2011))[257]. Another example could be that,

[255] Conversely, one might then argue that those other businesses that are within walking distances of those workplaces could suffer as a result of people taking longer lunch-time trips and therefore no longer 'shopping local'!

[256] We might, in fact, think about multiple regimes such as the bus-, rail-, tram- and taxi-regimes as well as the broader auto-regime (or 'system of automobility' URRY, J. 2004. The 'System' of Automobility. *Theory, Culture and Society,* 21, 25-39.)

[257] On the other hand, one could argue that the proliferation of taxis post de-regulation makes car ownership less necessary and facilitates lower car usage for some journeys. In that sense, taxis and bicycles (public or privately owned) can be two different replacements for the private car.

in spite of the all the sustainable transport rhetoric, the dominant transport planning regime is centred around an overarching imperative to seek to unblock traffic, maintain free-flow and smooth the way for auto-commuting into and out of the city[258]. There are, in short, multiple actors and processes which help stabilize the existing set of (unsustainable in the medium / long term) mobility regimes in Dublin.

A versatile tool - historical and contemporary processes / large and small

While the MLP has been used primarily to analyse historical examples of socio-technical change that took place over several decades or centuries (Geels, 2002, Geels, 2005a, Geels, 2007), I argue here that it is also helpful in studying a contemporary phenomenon and onewhich appears to be playing out over a short time frame (5 years). Equally, while Geels' historical examples above (and his contemporary analysis of transitions to renewable energy in the UK (2013)) all focus on large-scale processes, I argue that the framework is valuable for application to smaller scales such as my case study focus. Furthermore, while I worried initially (see Section 3.4.2) about the workability of enacting Whitmarsh's suggestions that the MLP could integrate "insights from the sizeable literatures on habits, heuristics, norms, social learning, social movements, human geography, governance, evidence-based policy, practices" (2012: 486), my experience with using the MLP and drawing ethnographic data into its framework leads me to a position that it is a more versatile and adaptable tool than I initially assumed.

In summary

One difficulty in using the MLP is deciding on what realms should be brought into the model. I used narrative interviews with some key informants to find out what types of issues ought to be examined more thoroughly, but there may well be other issues that I have not considered. Another difficulty is deciding on what level of detail is appropriate for describing the existing dominant regime that the new technological system attempting to break into. I leave these questions here for the moment.

I am very conscious that it may turn out to be premature - or simply incorrect - to say that we are currently in the midst of a transition of our mobilities system in Dublin: the system of automobility that has dominated the capital's urban transport system for at least half a century may well continue on for many more decades. On the other hand, a complex transition towards a

[258] For example, "the proposed M7 Naas to Newbridge By-Pass Upgrade Scheme will provide: Relief to existing motorway congestion along the route...." Page 3 of: ROUGHAN & O'DONOVAN – AECOM ALLIANCE 2013. M7 Naas to Newbridge By-Pass Upgrade Scheme. Non-Technical Summary of the Environmental Impact Statement.

quite different mix of regimes, in which a bike-sharing scheme has an integral role and a shaping influence, may be playing out – at least in the city centre. Either way, I argue that the MLP's repertoire of concepts helps to elucidate what is happening in a complex context and, crucially, it broadens the scope of our investigations in the subject of transport. As Geels puts it

> the MLP does away with simple causality in transitions. There is no single 'cause' or driver. Instead, there are processes on multiple dimensions and at different levels which link up and reinforce each other ('circular causality'). Scholars who study transitions therefore emphasise lateral alignments, unexpected linkages, thresholds and tipping points... Transitions are not driven by single factors (such as prices or technological change), but involve co-evolutionary developments between multiple dimensions (technology, industry, markets, consumer behaviour, policy, infrastructure, spatial arrangements and cultural meaning)... [T]he MLP is... a heuristic framework that guides the analyst's attention to relevant questions and issues..... The MLP represents a certain epistemological style (interpretive research), which is well suited to study uncertain and messy processes such as transitions. (2012: 474)

Chapter 8 – Conclusions

8.1 Introduction

An overarching argument of my thesis is that public bikes are a key artefact for understanding the relationship between technology and society – thus echoing the thesis of Freund and Martin in relation to the automobile (2009: 476).

In this final chapter, I reflect on the main contributions from my case study of the *dublinbikes* public bike system and in doing so, I consider the implications of my ethnographies for other mobilities studies and my MLP analysis for studies of other socio-technical systems (Sections 8.2 to 8.5). Finally, I consider what new propositions have emerged from my work that might form the subjects of future research efforts (Section 8.6).

8.2 Journey Experiences

One main contribution from this work is the creation of original empirical accounts of the experiences of public bike users. My data revealed that public biking journeys are filled with a myriad of, sometimes subtle, micro-experiences that are not captured by the standard indicators employed in the more traditional transport studies approach. Therefore my contribution supports the work of mobilities scholars who have contributed, inter alia, to wider debates on how time is spent while travelling – e.g. Burrell (2011) and Randles and Mander (2009) on air journeys and Lyons et al. (2012) on rail travel. That public bike journeys themselves have experiential value and meaning supports the broader challenge to a heretofore quintessentially reductionist and economistic approach to traffic modelling (as explored, for example, by Aldred, 2012-13). While there are no studies with direct comparative analyses between the public bike experience and that of other modes in a given city, it is possible to make some comparisons while drawing on the wider ethnographic literature. I summarise the results of these comparisons below under a number of themes.

8.2.1 Freedom, spontaneity and social inclusion

Freedom and the facilitation of spontaneity emerged as prominent themes from my empirical work. Public bikes offer a brisk alternative to the slow pace of walking and, in regard to bus journeys, an antidote to the (near) unavoidability of traffic congestion on city centre streets and people-congestion inside buses. These themes resonate firmly with the promises of individual mobility and freedom associated with the motor car (in particular). And, of course, while

congestion, controlled car parking and other measures changed the experience of urban driving in many (Western) cities worldwide from the 1960s and 1970s onwards, advertising rhetoric continued to rely on linking cars to individual freedom. My research demonstrates that public bikes offer an additional mobility option for urban dwellers, workers or visitors and they have the effect of 'shrinking the city' in the sense of improving accessibility within it[259]. My research also suggests that the concepts of pausability (Demerath and Levinger, 2003) and spontaneity need to be more fully acknowledged as important dimensions of the urban journey: the ease with which one can interact with *already acquainted* others encountered en route is a memorable aspect of the journey for many.

I argued also that the very low subscription fee to partake in public-biking undoubtedly incentivised its use; the more general theory, I propose, is that the uptake of mobility innovations may well be significantly higher at lower costs. However there are barriers to democratising the technology more fully related to the scheme being bound up with the need to have a bank account - and perhaps also with being digitally literate. Public bikes "shouldn't be luxury items" as Caroline Samponaro of Transportation Alternatives in New York argues (Rose, 2013)[260].

8.2.2 Solitary journeying – and contrasts with abroad?

My hypotheses upon commencing my research were: firstly, that urban cycling journeys generated more frequent spontaneous (and pleasant) street encounters with friends, acquaintances and unacquainted others – compared to those by motorised (or ambulatory) modes; and, secondly, that this increased conviviality contributed in some tangible way towards greater social cohesion in the urban context. My ideas, based on personal bicycling journeys, had crystallised over a decade or two and I speculated that the experiences were both common-place and documentable. However, through examining public-biking journeys, my hypotheses – or, at least some aspects of them - were falsified in a Popperian[261] sense: my findings suggest that public-biking has not provoked a new regime of sociability amongst unacquainted others on the streets. Of the interactions which do occur, they mainly take place at docking stations - the non-motorized equivalent of petrol stations. Some interactions with unacquainted others do occur

[259] As opposed to 'shrinking the city' in the sense of depopulating it, a current emerging challenge for many urban planners in the US, Canada, Europe and Japan. BLANCO, H., ALBERTI, M., OLSHANSKY, R., CHANG, S., WHEELER, S. M., RANDOLPH, J., LONDON, J. B., HOLLANDER, J. B., PALLAGST, K. M., SCHWARZ, T., POPPER, F. J., PARNELL, S., PIETERSE, E. & WATSON, V. 2009. Shaken, shrinking, hot, impoverished and informal: Emerging research agendas in planning. *Progress in Planning,* 72**,** 195-250..

[260] Of relevance here also is the work of MURPHY, E. & SWEENEY, B. 2013. Real time bus passenger information take-up and user perceptions of the service. *Irish Transport Research Network.* Trinity College Dublin. Interestingly, in regard to discussions around 'digital divides', their analysis showed that "in terms of income there was no notable difference in use of RTPI [real time bus passenger information] across income categories despite the fact that smartphones tend to be quite expensive" (page 4).

[261] See POPPER, K. 2005. *The logic of scientific discovery* Routledge (Originally published in 1934).

while on the move, but typically they are of a more confrontational nature with (bus or taxi) drivers, not of the creating 'weak-ties' variety described by Jacobs (1962). The public bicycle is not a tool for conviviality in the sense originally hypothesised; nor does it appear to have wrought greater social cohesion in the sense of engendering more regular, peaceful and meaningful interactions amongst those from different backgrounds journeying in the city.

Jensen, in contrast, in her examination of governmental representations of cyclists in Copenhagen, refers to the city's cycle track systems, created so as to remould the city's "urban spatiality into amiable, liveable urban spaces". She argues that "in normalising cycle mobility", the urban policy-makers build "a Copenhagen identity around cycling and target the emotional and sensuous dimension of cycling, including the social encounters, experience of green spaces and recreation" (2013: 223). Jensen further argues that cycle mobility "provides alternative opportunities for a 'sense of place', for social interactions, for emotional encounters, for slowing down speed, for sensing the natural and urban environment and for more equal accessibility in terms of social status and financial costs" (2013: 224).

Therefore, in terms of cycling social interactions, it appears that the Irish capital contrasts with its Danish equivalent (while acknowledging that Jensen considers cycling generally while I examine public biking). This raises a number of questions. Firstly, is the apparent sociability of cycling in Copenhagen related to the design of its infrastructure along which "cyclists find services such as air pumps, drinking water fountains, and a minimum of traffic lights. Each direction is at least three lanes wide" (2013: 223); or, does it spring from the "role of being 'socialised to cycle" (2013: 225) in a sociable way? Secondly, if we are in a transition in Dublin (and elsewhere) towards developing a new type of 'cycle infrastructure' (see National Transport Authority, 2011b, National Transport Authority, 2013a), can we expect to observe changes in (public) biking from being characterised by solitary experiences to more sociable ones? There are many variables at play and I am suggesting drawing on (a soft version of) technological determinism to explain apparent differences in cycling sociability in the two capitals: that is, the technology of the (generously proportioned) cycle track may shape the experience of sociability. See Figures 8.1 and 8.2 below.

Applying this reasoning to other forms of mobility, and echoing the analysis of Schivelbusch (1986) in regard to (open) American-style versus (compartmentalised) European-style rail cars, we might ask how the reconfigured designs of buses and trams and stations more generally might (or indeed might not) re-shape the socialities around motorised public transport.

Figure 8.1 – Cycling in pairs, Utrecht, The Netherlands, 2008

Figure 8.2 – Dublin's Grand Canal Cycleway, 2012

However, my findings do strongly suggest that public biking engenders new opportunities for socialising because they offer a means of getting to otherwise difficult-to-reach destinations within a tight time-frame. The public bike system is, in Wickham's terms, a public transport system that

> physically ties a city together and enables all inhabitants of the city to move around the city. Such transport welfare enables inhabitants to be citizens: transport links are the sinews of urban citizenship (2006b: 24).

8.2.3 Sensory and emotional journeys – and wider implications

In spite of its generally solitary nature and even though the average journey time is just thirteen minutes (J.C. Decaux and Dublin City Council, 2013a), a lot goes on in that fraction of an hour. Supporting Jensen's arguments about opportunities for "sensing the natural and urban environment" when cycling, public bike journeys offer a counter-experience to the increasingly desensualised, sanitised (Edensor, 2007), digitalized and spatially detached (although from *proximate others* only) journeys that are experienced inside cars and mass transit. They also contrast with the "less exciting" urban journey taken on foot, as Brad put it (Int18, Brad, American, 30s, transport planner). In essence, journeying on a (public) bike involves being more alert than walking.

An interesting broader inference here, again drawing on the arguments of Freund and Martin (2009), could be that mind-wandering or day-dreaming is curtailed through needing to be especially alert while biking. While alertness is valued in workplace and educational settings and is

promoted as one of the benefits of cycling (e.g. Sustrans, Undated), perhaps there are less desirable implications associated with spending less time with a wandering mind. Christoff et al. (2009) applied experience sampling[262] to fMRI (Functional magnetic resonance imaging) research on mind wandering and they concluded that

> mind wandering may be part of a larger class of mental phenomena that enable executive processes to occur without diminishing the potential contribution of the default network for creative thought and mental simulation. Although it may undermine our immediate goals, mind wandering may enable the parallel operation of diverse brain areas in the service of distal goals that extend beyond the current task." (2009: 5)

If it is a case that approximately half of *dublinbikers* previously walked to their destination (O'Neill and Caulfield, 2012: 11) and also the case that one generally day-dreams less on a (public) bike than on two feet as my own findings suggest, then perhaps there is or will be some loss of creative thinking in cities arising from a diminished amount of walking. What are the implications, personally and societally, of this? A possible (part-) counter argument here is that the additional (non- 'trip substitution') journeys that emerge with the public bikes, create additional walking time at either end of the DB journey – and therefore there will be less 'mind wandering' lost than there otherwise would be.

My findings also pointed to some sensory differences between journeys on 'ordinary bicycles' and *dublinbikes,* bound up it seems with the slower speed of the latter, itself related to the mass and geometry of the public bike. However, in spite of the (subtle) sensual differences between 'ordinary bicycling' and public-biking, crucially, the public bikes appear to provide (near) first-hand insights into the states of consciousness, physical and emotional experiences and perspectives of 'ordinary cyclists' vis-à-vis how the streets have not been configured for safe and direct cycling. As argued earlier, one policy consequence is that a wider consciousness of how streets are currently designed may enhance the acceptability amongst a larger (voting middle-class) population of traffic management measures aimed at making the city more bicycle-friendly (and less car-friendly). A broader theory here could be that the availability of a free and easy-to-access version of a technology or a new system enables a larger population to have new experiences, which may then shape that population's receptivity to further related ideas, policies or technologies.

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[262] "Experience sampling involves intermittently probing individuals to provide self-reports about their current mental state; thus, enabling online assessment of momentary changes in the contents of consciousness". Page 1 of: CHRISTOFF, K., GORDON, A. M., SMALLWOOD, J., SMITH, R. & SCHOOLER, J. W. 2009. Experience sampling during fMRI reveals default network and executive system contributions to mind wandering. *Proceedings of the National Academy of Sciences*.

Relatedly, I also floated the proposition that if more of the middle classes and 'policy elites' (Vigar, 2013), which we could reasonably assume include professional transport planners / traffic engineers, were now using public bikes, then we might expect there to be a further impetus to advancing more cycle-friendly policies than would ensue without the arrival of public bike scheme. The point here of course is not to suggest that such processes would be democratic or fair; it is to raise questions around the processes which may be occurring, given the existing uneven power relations in society.

These ideas also resonate with those of Blomkvist in relation to his historical work on the Swedish car society, a story of technology transfer that also "involved the transfer of both engineering methods and an automobile friendly ideology" (2004: 277). My suggestion here is that attached – in a completely unpredicted way - to the public bikes technology is a wider set of ideas, which may not necessarily be part of an ideology associated with the operators of the public bike sharing system (i.e. the transnational outdoor advertising company). Similar questions could also be applied to other contemporary forms of mobility and technologies.

8.3 The Bedding-in of Systems and Ripple Effects

The second principal contribution of this thesis relates to explaining how a new mobility system came to be built, how it settled into its receiving environment and what the emerging wider consequences were of its establishment. My contribution builds on theories developed in the transition literatures and links to the discussion at the end of the previous section.

In essence, my argument is that as planning for the introduction of the new socio-technical system gained pace and then as the system appeared on the ground and opened to the public, new processes and shifts in some existing processes were set in motion. These reconfigurations, located within and across a number of distinct domains, appeared to trigger or help trigger further cascade effects and feedback loops, and these are all now playing out. The array of domains in which shifts occurred is broader and much more diverse than that normally considered by transport policy-makers and scholars, while the array of actors or stakeholders shaping the processes is also extensive. In this section I consider also the implications for socio-technical innovation more generally, not just in bike-share terms.

8.3.1 From DIY to ecological modernisation

Public bike systems developed from a first generation model - underpinned by an anarchist political philosophy and characterised by a low tech, stand-alone, simple technology, that was premised (naively as it turned out) on trusting users not to steal the bikes – through to a 3rd generation model such as the *dublinbikes* scheme which is a highly corporatized, financialised, high tech system embedded in an array of tightly coupled and interdependent socio-technical systems (electricity, ICT, banking) and social systems (local government planning and transport institutions, industrial relations systems etc.). The spirit of the early bike share concept appears to mirror to some degree that of the early virtual / online community in the US as described by Turner (2005).

What started out as a DIY-ethos inspired human powered vehicular system morphed, to some extent and in some senses only, along the mobility trajectory described by Freund and Martin:

> [I]n the development from walking through riding an animal, sailing, railroading, steamboating, cycling, motoring, and flying, to space travel, the technologies of mobility have assumed a character of faster speed, larger scale, and greater technical sophistication (2009: 479).

However, in regards to the speed of movement *in city centres*, this has not changed very much over the last century and a half when we compare the average speeds of contemporary public bikes (or cars in even semi-uncongested conditions) against bikes or trams in the Victorian period for example (Griffen, 2006, Griffin, 2006, Corcoran, 2000). The scale of the new socio-technical system can be thought of as covering a geographical area of several km squared (or several tens of km squared in larger cities such as London or Paris) which is generally less than or similar to the scale of historic urban tram systems, and at least one order of magnitude smaller than a car focused planning scale. In terms of its scales of destruction - in automobility's hegemonic sense – it is certainly of human-scale reach or of 'Schumacherian' proportions (Schumacher, 1973): the destruction of the built environment and of human life associated with the public bikes is almost entirely absent – contrasting with the impact of inner city highway schemes in the late 1970's and 1980's in, for example, Dublin (McDonald, 1985) and in Melbourne (Davison, 2004) and the flows of motorised vehicles that go with them.

My main point here is that while there has been a steady trend towards increased complexity, technological sophistication and integration as bike share systems evolved since the mid 1960's, the emergence of public bikes still represents something of a counter shift to a broader cultural

trend towards higher carbon and more destructive technologies, exemplified by the normalisation of flying (see for example Randles and Mander, 2009). This counter trend might be understood as a part of an ecological modernization of society – the "readaption of industrial society within the global geo and biosphere *by modern means* such as a scientific knowledge base and advanced technology in order to... make development more sustainable" (Huber, 2008: 360): the latest generation of public bikes are only possible with advanced ICT technologies.

8.3.2 Embedding processes, re-alignments and resilience

At a macro-level, as the bike system embedded itself in Irish society, it intersected with and shaped a number of domains over and above those traditionally considered by transport researchers and (Irish) policy makers. In adopting a much more holistic exploratory research approach, there are potentially no realms which are not of potential interest to the investigator vis-à-vis what may have been disturbed by the 'ripples' created by the introduction of the bike scheme. "Technology", as Huber puts it:

> is not something detached from society. It is socially embedded and has its societal preconditions, so that understanding industrial change involves some degree of interdisciplinarity as inherent in the approaches of sociotechnical systems... analysis... [T]echnology... [is] conditioned and controlled by formative impulses originating in politics, public opinion, knowledge base, values and life-styles. (2008: 361)

It is that interdisciplinarity which shaped my research design and data collection methods.

As argued earlier, the arrival of the public bikes made it easier for the local politician to argue in favour of lower speed limits which were introduced and retained despite much opposition. As explained, the local advocacy group was re-energised to a degree after the introduction of the *dublinbikes* and, I argued, moved towards a more collaborative relationship with the local Council, which has been recently expressed through a series of *Dublin Cycling Stories* videos (Dublin Cycling Campaign, 2014b), funded by the Council and which also include a film promoting the public bikes themselves (Cahill and Butler, 2014). Further new or reconfigured coalitions between actors emerged in response to the bedding in of the *dublinbikes*. This re-aligning of interests can be understood as part of the evolution and adoption of a new socio-technical system. Furthermore, the expansion of the *dublinbikes* to link more closely with rail, bus and tram stops/stations (and the creation of supporting cycle infrastructures etc.) can be interpreted as helping to 'lock in' the technology with positive network effects or externalities. As Unruh puts it,

the network becomes more valuable to users as it grows in size, in much the same way that a road network or telephone network does (2000: 822).

However, somewhat in opposition to this expansionary trend creating greater integration between separate parts of the technological system, the dependence of the bikes and socio-technical system on multiple institutions (electrical, ICT, banking, industrial relations) creates vulnerabilities - with recent experience in London showing that this is not just a hypothetical situation (as discussed in section 7.6.4). This lack of system resilience contrasts sharply with the characteristics of individually owned bicycles. And while system resilience is addressed in other systems (even systems such as off-shore helicopter systems (Gomes et al., 2009)), it is unclear if the operators and planners of 3rd generation public bike systems are engaging seriously with the concept of resilience: will Dublin's public bikers be stranded if any of the electrical, communications, banking or industrial relations systems are disrupted? While the bus system is certainly now entwined with ICT and hence municipal electrical systems – e.g. as regards displays of real time passenger information (RTPI) and the use of traffic signal systems – it is the not necessarily the case that buses will automatically cease to move should those systems fail, unlike the public bikes.

As regards the domain of education, there is some evidence that the foci of Dublin based students of transport, technology and innovation shifted in response to *dublinbikes* but it is too early to say if curricula of transport studies courses have been reshaped. If such shifts in curricula become observable this can be considered significant since with the history of the automobile, there was a co-evolution of institutions such as new disciplinary departments "staffed by highly trained individuals whose purpose was to educate professionals and refine the body of knowledge underlying the dominant design" (Unruh, 2000: 823). This point raises another realm for further research: the nature of the processes around (re)shaping transport studies curricula (in all universities and technology institutes in Ireland and other countries - both in places with and without public bike systems) and engineering practice so as to draw in the evolving knowledge of public bikes. Do these processes resonate with the histories of how US highway building practice shaped its Australian equivalent as described by Davison (2004)? These points raise much broader questions in regard to how all university curricula are shaped by social and other forces (Barnett et al., 2001) – and indeed they raise reciprocal questions of how university curricula shape life beyond the gates of the academy.

8.3.3 Complex systems and transitions

My arguments and contributions above bring to the surface the nature of some of the complex processes by which transitions take place. By prising open the micro-experiences of bike users through ethnographic methods and marrying these to insights gained by applying a MLP theoretical framework to the larger system, I have created new conceptual connections and an original synthesis of ideas around the sociology of public bike systems. I have tugged these emerging ideas along, developing them as much as possible. Some ideas bore fruit, while others stalled; while for others still, I bring them to a particular juncture and suggest avenues for future researchers to develop them further.

Looking beyond this case study, a further conclusion from this research is that we need to think more holistically and multi-dimensionally when seeking to understand what happens when new transport and other socio-technical systems emerge. To express this in disciplinary terms, it goes way beyond engineering and spatial planning realms to understand the shaping effects of a new transport intervention – just as it does to understand the effects of the diffusion of mobile telephony on social life (see for example Castells et al., 2006). My research has applied the MLP framework to a contemporary process operating over a relatively short time period (compared to Geels' (2002) case study of shipping for example), and it has helped to map out a framework for assessing the wider knock-on effects of introducing public bikes (and perhaps other interventions) which are not captured in existing datasets. Additionally, my findings suggest that any evaluation framework for assessing the impact of a bicycle share scheme needs to be broad and multi-dimensional, thus going beyond what Fishman et al (2012b) propose.

8.4 Strengths and weaknesses of my research design and methods

Further to discussions in Chapter 4 (Methodology) and in the concluding section of Chapter 7 (Systems), I reflect here on what I see as the main strengths, weaknesses and limitations of the methodology adopted in my study. There are three main points I wish to highlight.

First of all, I am very conscious that I favoured breadth over depth in my study, especially in regard to elucidating the processes (potentially) associated with embedding the new socio-technical system into a city. To consider one example (as discussed in Section 5.4.4), I took a very cursory glance at the websites of property agents so as to begin to sketch out how the new system became incorporated into their armoury of sales paraphernalia aimed at prospective buyers and letters (and hence became somewhat normalised in a particular way). What would be extremely interesting would be to carry out a systematic comparative study of how *all* of the

other transport modes and facilities are represented in a far larger sample of the online material of such agents. The difficulty of scraping the surface of these processes is that one does not fully ascertain what is happening in a particular domain. The flip side of the argument – and the one that I posit strongly – is that taking the broad view (and to do that, using a diverse mixture of methods across the two main strands of work) enables one to build a holistic picture of what is happening. Further, while acknowledging that some of the data collection methods are unsystematic I argue here, following Mays and Pope (1995), that statistical representativeness is not a prime requirement when the objective is to understand social processes.

Secondly, and in regard to prising open the journeys, I argue here that by using a traditional method of interviewing I was able to interview 40 persons and tap into their multi-sensory experiences of public bike travel and compare those to other journey experiences. While more contemporary mobile methods and analyses may have yielded more detailed knowledge of particular aspects of travel, each comes with its own limitations. Additionally, one weakness I am conscious of in regard to how I executed one of my data collection methods is that I did not interview some particular user groups (e.g. tourists). Perhaps also, in hindsight, a more persistent approach aimed at bringing the owners and managers of commercial premises located near docking stations into the study might well have yielded more interesting data – but time did not permit after my initial efforts failed.

Thirdly, and to return to my systems strand of work, one challenge with examining the possible ripple effects of introducing the public bikes was the difficulty in defining those realms which are unperturbed by the new socio-technical system. It seems that there is a continuum rather than a sharp boundary between those domains which are untouched and those which are definitely reshaped by the public bikes. While the MLP framework certainly helps in identifying potentially relevant domains, it is still difficult to pin down the scope of the domains to be investigated. Relatedly, although the systems strand of work is in many ways the most intriguing, it is seldom possible to demonstrate mono-causality for any changes in (for example) discourses and policies observed subsequent to the introduction of the *dublinbikes* system. As we know from Hughes' and others' work, the socio-technical system under examination sits within a wider "seamless web" of domains and the processes at work are complex.

8.5 Policy relevance of findings

My research findings have advanced a number of theories and these can begin to be applied to an array of policies – in the realm of the development of urban cycling (from a sustainable transport perspective) and in broader realms around transitions. These I discuss here, extending earlier commentaries in Chapters 5, 6 and 7.

8.5.1 Policy lessons re: promoting successful public bike systems

The large and rapid uptake of *dublinbikes* suggests that there is a willingness by the (Irish) public to use new services or systems when they enhance mobility options. While shifting transport habits towards more sustainable and healthier alternatives is notoriously difficult (Diana, 2010: 429), the success of the public bikes reminds us that change is possible (while acknowledging that almost half of public bikes users substitute for trips previously taken on foot (Murphy and Usher, 2013: 16)). While not an explicit focus of my research, my work elucidated some factors behind *dublinbikes*' success which may inform future schemes.

The thoughtful positioning of docking stations at employment centres and at public transport stations and stops met the needs of many commuters. Many users spoke of their bike use as "a pure convenience thing" (Int02, Terry, 40s, IT contractor) with the typical distance between Dublin rail (and tram) stations/stops and employment centres - quite far to walk, unsatisfactorily disjointed for another public transport trip – being well suited to biking. While for lunchtime journeys, the public bike extends the reach of what can be done within a short time period. Meanwhile it seems that the careful micro-positioning of stations at locations that are overlooked or have 'passive policing' on the street has helped to deter vandalism and theft of bikes. Furthermore, the perception of vandalism and theft *of privately owned bicycles* is a definite factor in persuading some to opt for *dublinbikes*. So, while high crime rates (or perceptions of same) may well be a barrier for increasing bicycle use in city centres (Timoney, 2014), they may somewhat paradoxically provide opportunities for promoting public biking. This point is particularly relevant in cities which are seeking to establish their urban bicycle cultures but which have high crime rates vis-à-vis bike theft.

Furthermore the research suggested some of the mechanisms or micro-mental processes by which users came to decisions to (a) subscribe for a *dublinbikes* card and (b) start using the new mobility option. Peer influence appears to be an important mechanism here, as exemplified by Mary:

> it has certainly made me much more conscious of people on bikes, and a number of my colleagues I would say – five of my colleagues - have signed up as a result of me going on about them and they all, you know, get great use out of them (Int16, Mary, 50s, banking employee)

This has wider relevance for behavioural change work. Future research efforts might explore further the circumstances in which public bikers decided, firstly, to subscribe to the scheme and, secondly, to start using the bikes for the first time.

8.5.2 Policy lessons re: stimulating cycling and (utility) bike purchases

My findings showed that the public bike scheme connects with people with a broad spectrum of cycling life histories. As a single intervention – and corresponding, for example, to just one of the nineteen objectives in the *National Cycle Policy Framework* (Department of Transport, 2009b: 9) – the scheme connects with quite a diverse array of people for a variety of journey types throughout the city centre, not just on one corridor.

My research also supports the finding of Murphy and Usher (2013) that the introduction of the *dublinbikes* is prompting people both to buy their own bikes and to cycle more. Moreover my data shows that the public bikes are shaping to some degree the type of privately-owned bicycles bought in Dublin, with an apparent shifting of preferences towards more practical machines with carrying capacity (baskets or otherwise). Therefore there may be a re-orienting of how bicycles are understood by the public. I.e. they are functional urban tools which help one carry books, laptops and shopping etc. – not (just) sports machines.

The difficulty, perceived or real, of storing privately owned bicycles (at home or elsewhere) is a further reason to use a public bicycle, as revealed in my data. While Pucher's research shows that there "are few rigorous studies of the impacts of bike parking on bicycling levels" (2010: S112), my findings lead to a recommendation that, from a cycling promotion perspective, building regulations (and the enforcement of them) need to deal with secure bicycle parking provision properly because the absence of them is deterring private bike use. The more general point is that if public policy aims at encouraging a particular set of behaviours, there needs to be a greater recognition of, very simply, making it as easy as possible (be it in infrastructural, financial, procedural or other terms). Furthermore, the findings from my ethnographic investigations highlight the need for highway authorities to pay far more attention to the quality of carriageway surfaces and to be cognisant of cyclists' safety needs as further on-street tram lines are being

developed. The intense embodied nature of the vibrations experienced while traversing disjointed roads was articulated strongly by respondents.

8.5.3 Policy lessons re: public health

Drawing, firstly, on my interview data which shows that some *dublinbikers* are reflecting on their own health over the course of their journeys and in deciding to cycle, secondly on emerging trends in which exercise (including cycling) is now beginning to be prescribed as a preventive therapy (Warburton et al., 2006), and thirdly on recent experience in Boston in which doctors are prescribing reduced fee bike-share membership to patients (Brownstone, 2014), one can conclude that there is greater scope for public health policy-makers to creatively integrate public bike schemes into their toolbox of options to improve public health. However, while unlike the US, where it appears to be mainly the high membership fee of some public bike schemes that is the entry barrier, the focus in Ireland may need to be on overcoming the barriers for low income groups related to the need to have bank accounts, as discussed in Chapter 5.

More broadly still, my findings support the need to strengthen the growing (but still tentative and tenuous) connections between the policy spheres of transport and health, particularly so in the context of the high rates of obesity and overweight amongst children (for Ireland, see Economic and Social Research Institute (ESRI) and Trinity College Dublin, 2011). My findings link therefore with the work of scholars of policy integration with a focus on transport and health (e.g. Hull, 2008, Dora and Racioppi, 2003) and the new tools made available by the World Health Organization (2014).

8.5.4 Public bikes - consolidating the city centre

I argued earlier that the public bikes created new patterns and possibilities, and I predict here here that as the system expands we will see further new patterns of movement, especially amongst the cohort that currently seems most amenable to the system: middle class, young to middle-aged men. Additionally, we might reasonably expect various destinations (residential, cultural, commercial) within easy cycling distance to be preferentially frequented over those beyond the public bike zone. In essence, the new form of mobility is having the effect of making the city centre a more attractive place to dwell in and, as alluded to earlier, it may be shaping the residential market in some small way too. In much the same way - as Wickham (2006a) argues - that public transport can extend the area of the pavement city (i.e. the area that people can walk around) by enabling people to hop on and off trams (in particular) or metro trains (where available) and then continue their strolling, I maintain that the public bikes are holding the city together in a similar and vital way.

These observations, arguments and further theories amount to a moderate version of a technological deterministic argument: the introduction of the new technology, while socially constructed, is also shaping individuals' values, behaviours and habits – and the collective effect of these new habits may be to help in consolidating the city centre. The policy implications suggest themselves here: if a municipality wishes to revitalise its city centre – as per the new urbanist orthodoxy (see, for example, Gehl, 1987 , Gehl, 2006, Krier, 1984) – creating a public bike system and nurturing a (public) bike culture may well be an effective strategy to support this aim.

8.5.5 Transitions and transition management

As argued above, one of my overarching propositions is that public bikes provide (near) first-hand insights into the perspectives of 'ordinary cyclists' vis-à-vis how many city streets have not been configured for easy movement of bicycles and, consequently, this empathy may enhance the acceptability amongst a much wider population of putative traffic management measures to make the city more bicycle-friendly. Broadening out our thinking, we might start to imagine how *other new initiatives* giving tastes of alternative systems might break down wider resistance against particular transitions. These questions resonate with the philosophy underpinning the Dublin City Council Beta Projects in regard to trialling new ideas (Dublin Beta Projects, 2014).

I also contend that various actors, such as government bodies or advocacy groups, may now be in a better position to exploit the new understandings and empathy that appear to be engendered through creating new technologies / social innovations, so as to advance other initiatives which otherwise would be difficult or impossible to do. We might view such processes as helping to generate a momentum in a (broader) socio-technical transition. The new knowledge created in this research can enhance our understanding of potential transition pathways towards lower carbon futures. These points tie in with the issues discussed by scholars of transition management (e.g. Kemp et al., 2007, Loorbach, 2010). They also respond to Urry, in his analysis of climate change and his assessment of a number of future scenarios, where he argues that "the crucial need is for [a] social science analysis of how to move.... to societies comprised of interlocking low carbon systems" (2011: 157). While scholars debate over the (small) quantities of CO2 emissions saved when trips by other modes are substituted by the public bike mode and this will be specific to different cities (Fishman et al., 2012b), my finding is that the public bike system in Dublin is contributing to a broader shift in the city's array of socio-technical regimes.

A core concept in the multi-level perspective is that of the *window of opportunity* which opens in response to shifts at the landscape level. Whitmarsh gives the example of:

> structural changes (e.g., freeway closures, worker relocation) offer[ing] windows of opportunity in which travel habits (e.g., driving) are disrupted and must be renegotiated – this may lead to sustainable modal shift either without... or with targeted policy interventions (e.g., personal travel planning, free 1-month bus passes...". (2012: 485)

The windows of opportunity concept is also useful here in prompting one to consider what might be those opportunities to be exploited in the coming years so as to help further embed the new socio-technical system in the city. In a Dublin context, one could consider the question: to what extent might the (local) government departments use the opportunity opened up by the (disruption associated with the) construction of the Dublin's new tram, *Luas Cross City* (Railway Procurement Agency, 2014a), to help shift travel habits and civilise the city centre? One possible way would be to build on the momentum already developed with the shifts in the regime.

8.6 Further Research

I have already brought to the surface an assortment of micro-sociological issues which fall collectively within the mobilities research sphere. Along the way I have falsified some hypotheses and in their place, hydra headed-like, others have emerged. My findings have captured a snapshot of a number of processes integral to socio-technical systems change. These understandings are only partial though, so in this final section, broadly subdivided between micro- and macro-realms, I propose a number of prioritised lines of future research. These proposals are not meant to be exhaustive; there are a multitude of potentially fruitful angles a researcher could adopt in further exploring the phenomenon of public biking. I have already, in any case, suggested further lines of enquiry in earlier sections and chapters of the thesis.

8.6.1 Shifting profiles of public bikers / transnational diffusion of cultural practices?

What will be interesting to observe in future years is the demographic profile of bike-share users. Will it remain something of a 'niche activity' in terms of gender, age and socio-economic background as Murphy and Usher (2013) demonstrated? And in the context of projected substantial increases in the numbers of older (i.e. over 65) men and women in Ireland in 2021 (Connell and Pringle, 2004) and with scholars (e.g. Department of Planning Oxford Brookes University, 2013) and campaigners (see Cahill, 2014) now turning their attention to cycling amongst the older population, will we see more older citizens using public bikes? At the other end of the age spectrum and as mentioned earlier, bike sharing systems for children are now becoming available with the first scheme launched in Paris (Linshi, 2014). Future research might examine the systems through the eyes of the young and old.

There is also work to be done in probing the habits of public bikes use by immigrants and holiday-makers so as to understand better processes of diffusion of habits between countries and cultures. Furthermore we do not know if, controlling for other variables, immigrants are more likely to use the bikes in their new cities - irrespective of whether or not their (nearest) home city had such as a system - than non-immigrants. It would be interesting to know if, and to what extent, migrants may in some way accelerate the introduction of new (mobility) practices. These questions connect with a separate set of literatures relating to the transnational diffusion of cultural practices.

8.6.2 Journey experiences further compared / the meaning of public bike maps

In terms of journey experiences 'public' biking in Dublin is, it seems, a solitary rather than a sociable experience and there appears then to be a contrast with other cities as described (above) by Jensen (2013). A potentially fruitful research sphere would, therefore, be to compare the social (or sociable) experiences of bicycle users (public and privately owned bikes) on a range of route types in a given city. So, for example, do cyclists on lightly-trafficked urban roads have qualitatively different social experiences than those on wide segregated cycle tracks 'designed for 2+1 cycling'[263] or those on other (urban) road types? And for broadly comparable road types in different cities and countries, how do experiences compare? Furthermore, if we drill into the apparently more amiable Danish urban context, how important are random chats between strangers - as opposed to, for example, those between parents and children in cargo bikes or friends who set out on a journey together? We might extend our ethnographic research to cover systematic comparative analyses of the (un)social experiences - amongst proximate others that is - of pedestrians, bus passengers, tram users or drivers etc. So, while Appleyard et al. (1981) demonstrated how increasing motorised traffic levels impacted negatively on the sociability of residential streets in San Francisco in the late 1960s - a result replicated by Hart (2008) in Bristol - it is still somewhat unclear how different mode choices shape en-route sociable encounters.

My prising open of public bike journeys also drew attention to the notion of belonging, a concept largely neglected in mobilities research (with some exceptions (e.g. Gustafson, 2009)). There is considerable scope to examine this concept more thoroughly in the context of different mobility options. For example, do bus passengers who regularly sit upstairs on double-decker buses have a different sense of belonging in a city than those sitting downstairs on the same bus or those cycling or driving along a similar route?

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[263] That is, two people cycling side-by-side (and perhaps hand-in-hand) and with room for someone else to pass. SEYMOUR, J. 2014. *RE: Personal communication - as discussed at the Workshop in Dublin City Council on 21/Jan 2014.* .

One is also prompted to think about the potential interpretive and symbolic value of the *dublinbikes* map (Appendix 8.1) showing docking station locations. Might such a map begin to "tame and enframe" the city in the way that Harry Beck's iconic and ubiquitous London Underground Map does for Vertesi (2008)? How does the *dublinbikes* map (or app) itself structure our interactions with the city? Currently we do not know, so this is another potential line of enquiry for future scholars.

8.6.3 Systems effects – on actors, coalitions and political priorities

My research findings indicated that (senior-level staff members in) particular transport agencies have been proactive in requesting docking stations near public transport stops/stations as part of the scheme expansion. This suggests a realigning, to some extent at least, of the interests of public transport providers in regard to cycling and this reorientation of values deserves more attention. On the other hand, it would be interesting to ascertain more systematically the views of taxi drivers on public bikes. Are the bikes viewed as a source of competition (and users viewed as a nuisance on the roads) or do drivers see the public bike system as a tool to enable citizens to lead car free (owning) lives which may thus lead to higher taxi use and benefits to the taxi sector (especially in a post deregulation environment[264])? Currently we do not know.

It appears also that as the system bedded-in, this prompted to some degree a closer alignment between cycling advocacy groups and the Council and this, in turn, gave momentum to further processes pushing in the same sustainable transport and liveable streets directions. These conclusions resonate with Geels' transition theories:

> Socio-technical systems are actively created, (re)produced and refined by several social groups, for instance, firms, universities and knowledge institutes, public authorities, public interest groups and users. Their activities reproduce the elements and linkages in sociotechnical systems. These social groups have their own vested interests, problem perceptions, values, preferences, strategies and resources (money, knowledge and contacts). This implies that transitions are multi-actor processes that involve interactions between many social groups, e.g. commercial transactions, political negotiations, power struggles and creation of coalitions. (Geels, 2005a: 446)

[264] The debates continue as to wider impacts of taxi deregulation. See BARRETT, S. D. 2010. The Sustained Impacts of Taxi Deregulation. *Economic Affairs,* 30, 61-65. And AQUILINA, M. 2011. Quantity De-restriction in the Taxi Market: Results from English Case Studies. *Journal of Transport Economics and Policy (JTEP),* 45, 179-195.

There is a need then to investigate in greater depth the role of (coalitions of) actors in provoking systems changes in the transport realm. A further interesting avenue of research could be to investigate if the introduction of the *dublinbikes* system prompted any shifts in power structures – perhaps with power shifting away from the Local Authority and towards private (outdoor advertising) industries or, conversely, with power over and responsibility for the cycling public shifting more towards the Local Authority since, for the first time ever, the Council now (part-) owns the transport fleet used by the citizens in the form of the bikes. Relatedly, within the Local Authority, what internal re-organisation processes can be linked to the arrival of the bikes and what happens the techno-scientific knowledges associated with managing the scheme as staff members move about?

Finally, I noted earlier that it was beyond the scope of this research to examine systematically how the political priorities of both local level and National level politicians (and parties) may or may not have shifted in response to the introduction of the new socio-technical system. My initial findings suggest they have shifted but it would be insightful to tease out this question much more systematically and comprehensively.

8.6.4 Mapping and tracking the system effects *of other* municipal bike schemes

I have brought to the surface in this thesis a raft of arguments, theories and questions around the nature of the multiple and multi-dimensional, subtle and not-so-subtle, processes associated with embedding a new public bike system in a city. As new schemes are on the point of being opened in four Irish cities and 229 cities globally (Meddin and DeMaio, 2014c), can we expect to discover equivalent findings? If they turn out to be different, in what way(s) might that be so and could differences be related to the different sizes/nature of the cities or to the differing scales of bike schemes (or both or neither)? Clearly, and almost overwhelmingly, there are many domains and variables to consider if conducting such comparable analyses, including the nature of the pre-existing cycling culture of the cities. A major challenge therefore in designing these studies will be in defining the scope. Relatedly, there may well then be further work to be done in revisiting and recasting evaluation frameworks for the assessment of public bike schemes (such as that of Fishman et al., 2012b). In other words, scholars may need to acknowledge that cascade effects associated with introducing new public bike systems are commonplace and may need to be tracked if we are to understand fully how bike schemes are 'performing'.

8.6.5 The Vulnerabilities and Resilience of Systems

I conclude this chapter – and the thesis – by raising again what I see as the crucial issue of resilience. I noted earlier that there is a striking absence of published research on the social,

economic and environmental implications of disruptions *to any of Ireland's transport and other systems*, not just the public bike system. This is an area ripe and ready for research - and there is a real urgency in conducting it. As Urry puts it, "the world is experiencing rising temperatures, oil down to its dregs, the enduring power of carbon capital, the dictatorship of financial markets and the vast inequalities likely to engender bitter conflicts and opposition" (2013: 240). Massive disruptions to our major socio-technical systems would appear to be an inevitability, not just a possibility – but still there appears to be a lot of apathy about and with few serious plans in place to guide a response.

The potential vulnerability of 3rd generation public bike systems might appear to be of very minor importance in comparison to larger systems failures such as those arising from the Icelandic ash clouds - which highlighted, inter alia, the "nature of strandedness in a world of mobile lives" (Birtchnell and Buscher, 2011). However I posit that, given that the latest versions of public bike systems are plugged into several of the core large-scale socio-technical and social systems of the industrial- and post-industrial ages – electricity, information communications technology, and banking to name but three, being able to grasp the myriad of complex processes playing out at this smaller scale will help us to understand the complex processes at the larger scales.

My final point is that I think it will only be through escaping from our disciplinary silos that we will grasp these complex issues – hence the need for using seemingly messy multi-level conceptual frameworks.

APPENDICES

APPENDIX 2.1 – MOVEMENTS INTO CENTRAL 'CANAL CORDON' OF DUBLIN

Mode	2006	2007	2008	2009	2010	2011	2012
Bus	59,874	57,201	60,438	56,168	50,420	54,251	52,007
Rail	33,534	35,692	32,324	25,723	23,580	22,932	23,999
LUAS	9,029	9,171	9,242	8,776	9,111	9,949	10,014
All Public Transport	**102,437**	**102,064**	**102,004**	**90,667**	**83,111**	**87,132**	**86,047**
Car	76,850	71,597	67,732	71,043	71,978	69,681	68,626
Taxi	1,453	2,154	1,930	2,739	2,260	2,674	3,271
Walk	17,114	18,594	18,360	14,618	15,092	14,551	17,070
Cycle	4,839	5,676	6,143	6,326	5,952	6,870	7,943
Goods	2,291	1,445	1,223	1,087	993	1,176	1,099
Motorcycles	2,395	2,429	2,375	2,060	1,656	1,485	1,425
Total Person Trips	**207,379**	**203,959**	**199,767**	**188,540**	**181,042**	**183,569**	**185,481**

Persons crossing the Canal Cordon[265] by mode of travel (National Transport Authority, 2013c: 4, Table 2.1)

Mode	2006	2007	2008	2009	2010	2011	2012
Bus	28.87%	28.05%	30.25%	29.79%	27.85%	29.55%	28.04%
Rail	16.17%	17.50%	16.18%	13.64%	13.02%	12.49%	12.94%
LUAS	4.35%	4.50%	4.63%	4.65%	5.03%	5.42%	5.41%
All Public Transport	**49.40%**	**50.04%**	**51.06%**	**48.09%**	**45.91%**	**47.47%**	**46.39%**
Car	37.06%	35.10%	33.91%	37.68%	39.76%	37.96%	37.00%
Taxi	0.70%	1.06%	0.97%	1.45%	1.25%	1.46%	1.76%
Walk	8.25%	9.12%	9.19%	7.75%	8.34%	7.93%	9.20%
Cycle	2.33%	2.78%	3.08%	3.36%	3.29%	3.74%	4.28%
Goods	1.10%	0.71%	0.61%	0.58%	0.55%	0.64%	0.59%
Motorcycles	1.15%	1.19%	1.19%	1.09%	0.91%	0.81%	0.77%
Total Person Trips	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Mode share of people crossing the canal (National Transport Authority, 2013c: 6, Table 2.2)

[265] See Appendix 7.3 showing this central cordon

APPENDIX 4.1 – PILOT INTERVIEWS

Pilot No	Usual means of moving	Other means	Interview date
Pilot 01	Motorbike		Wed 27/Oct/2010
Pilot 02	Bus	Luas	Wed 27/Oct/2010
Pilot 03	Cycle	Car Driver	Tue 16/Nov/2010
Pilot 04	Train		Tue 16/Nov/2010
Pilot 05	Bus	Walk / Plane	Tue 16/Nov/2010
Pilot 06	Cycle		Thu 16/Dec/2010
Pilot 07	Train		Thu 16/Dec/2010
Pilot 08	DART / Walk		Thu 16/Dec/2010
Pilot 09	Drive		Fri 17/Dec/2010

APPENDIX 4.2 – DATES OF LETTER DISTRIBUTION

Date	Street	DB Station	Location
Thu 12 or Fri 13/Jan 2012	Exchequer Street	9	City centre
Tue 21/ Feb 2012	Pearse Street	32	City centre
Wed 18/April 2012	Portobello	44	Periphery
Wed 18/April 2012	Charlemont	5	Periphery
Thu19/April 2012	Charlemont	5	Periphery
Tue 20/Nov 2012	Foynes St	14	City centre
Fri 23/Nov 2012	Foynes St	14	City centre

APPENDIX 4.3 – MAP SHOWING LOCATIONS OF STATIONS AT WHICH I LOITERED

APPENDIX 4.4 – LETTER DISTRIBUTED ON THE STREET

COLÁISTE NA TRÍONÓIDE, BAILE ÁTHA CLIATH | TRINITY COLLEGE DUBLIN
Ollscoil Átha Cliath | The University of Dublin

January 2012

Pilot Interviews of the Users of the *Dublin Bikes* Public Bikes

Dear Potential Interviewee,

I am conducting research into experiences of users of the *Dublin Bikes* public bikes. This is being carried out in Trinity College as part of a Ph.D. degree with supervision provided by Prof. James Wickham.

I wish to interview users so as to explore how *Dublin Bikes'* journeys compare with those taken by other transport modes.

I would be delighted if you agreed to participate in this pilot phase of research. The interview will last around 15-20 minutes at a location and time (weekday or weekend) of convenience to you, ideally before Sunday 22nd January. My suggested venue for the interview is the Library Bar of the Central Hotel (just off South Great Georges St.) or in Trinity College but I can make myself available at any city centre location. Tea or coffee will be on me!

Please contact me – by email on dotuama@tcd.ie or by phone or text at +353-87-2840799 – to let me know if (and when) you can participate. Please note that I propose to make an audio recording of the interview. All information will be kept strictly anonymous and confidential.

Yours faithfully,

Damien Ó Tuama, Ph.D. Candidate,
Mobile: +353-87-2840799
dotuama@tcd.ie

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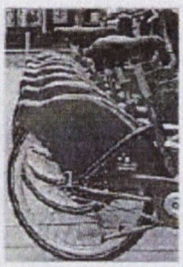
APPENDIX 4.5 – LETTER DELIVERED TO HOUSES

COLÁISTE NA TRÍONÓIDE, BAILE ÁTHA CLIATH | TRINITY COLLEGE DUBLIN
Ollscoil Átha Cliath | The University of Dublin



29-31 May 2013

Interviews of residents near *Dublin Bikes* stations

Dear Resident,

I am conducting research into the *Dublin Bikes* scheme. This is being carried out in Trinity College.

I wish to interview residents with *Dublin Bikes* stations nearby to find out what influence (if any) the scheme is having on the local area.

I would be delighted if you agreed to participate in the research. The interview will last around 15- 20 minutes at a location and time (weekday or weekend) convenience to you. My suggested venue for the interview is a quiet café or bar nearby – or, if the sun is shining, on a public seating area outside - but I can make myself available at any location that suits (including the city centre). Tea / coffee will be on me!

I'd appreciate it greatly if you contact me - by email dotuama@tcd.ie or by phone/ text 087-2840799 – to let me know if (and when) you can participate. Please note that I propose to make an audio recording of the interview so as to make transcription easier. All information will be kept strictly confidential and anonymous.

Yours faithfully,

Damien Ó Tuama (Ph.D. Candidate)
[Supervisor: Prof. James Wickham (Sociology Dept.)]

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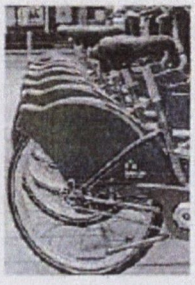
APPENDIX 4.6 – LETTER DELIVERED TO BUSINESSES

COLÁISTE NA TRÍONÓIDE, BAILE ÁTHA CLIATH | TRINITY COLLEGE DUBLIN
Ollscoil Átha Cliath | The University of Dublin



04 June 2013

Interviews of businesses near *Dublin Bikes* stations

Dear Owner/Employee of Business/Organisation,

I am conducting research into the *Dublin Bikes* scheme. This is being carried out in Trinity College.

I wish to interview owners/employees of businesses/organisations with *Dublin Bikes* stations nearby to find out what influence (if any) the scheme is having on the local area.

I would be delighted if you agreed to participate in the research. The interview will last around 15- 20 minutes at a location and time (weekday or weekend) convenience to you. My suggested venue for the interview is a quiet café or bar nearby – or, if the sun is shining, on a public seating area outside - but I can make myself available at any location that suits (including the city centre). Tea / coffee will be on me!

I'd appreciate it greatly if you contact me - by email dotuama@tcd.ie or by phone/ text 087-2840799 – to let me know if you can participate. Please note that I propose to make an audio recording of the interview so as to make transcription easier. All information will be kept strictly confidential and anonymous.

Yours faithfully,

Damien Ó Tuama (Ph.D. Candidate)
[Supervisor: Prof. James Wickham (Sociology Dept.)]

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APPENDIX 4.7 – INTERVIEW PROMPTS

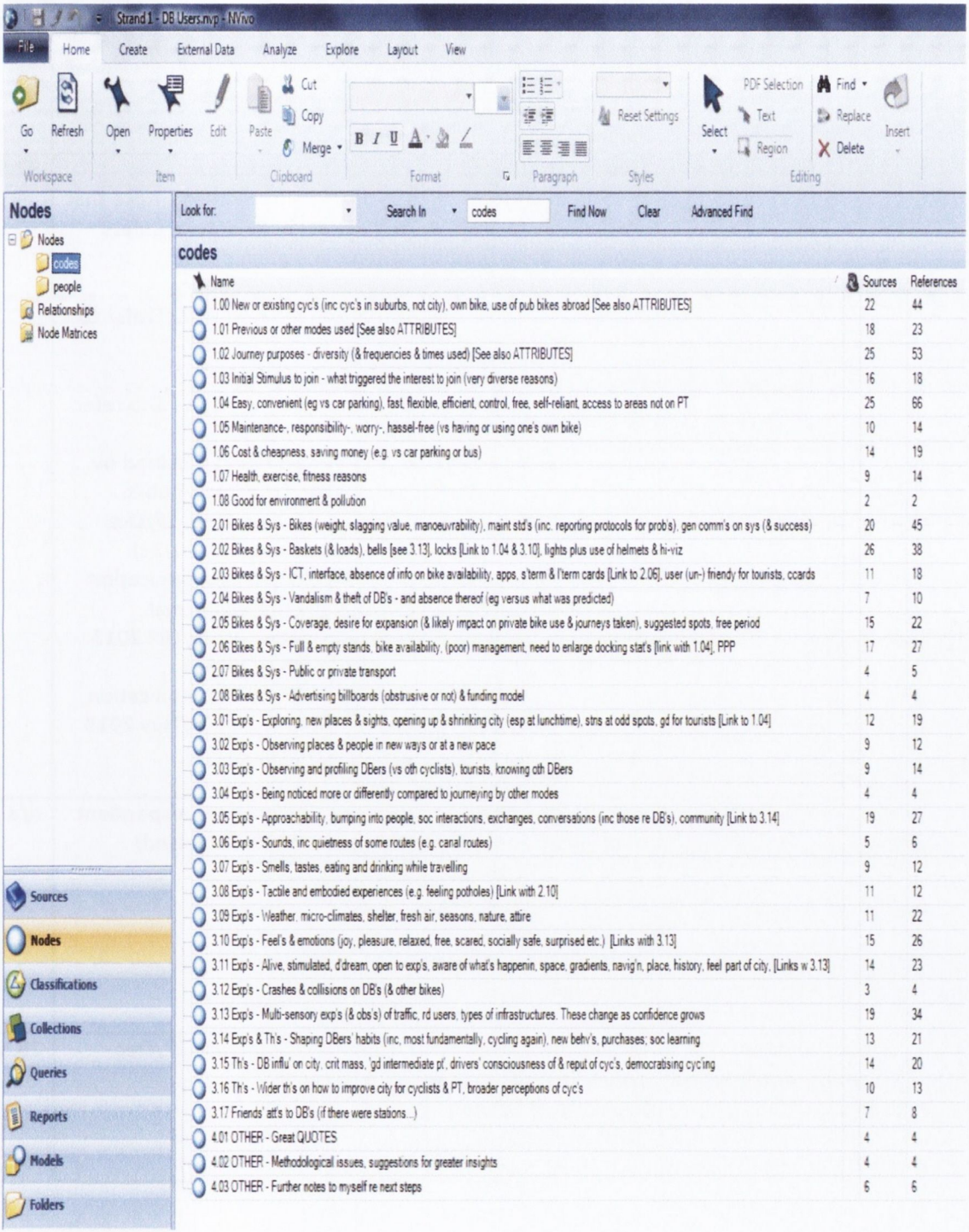
Main questions and prompts (for interviewees Int01 to Int27)	
	My introduction - TCD student - My aim is to find out about people's *dublinbikes* journeys
	Can you tell us about your typical *dublinbikes* journeys - perhaps starting with your most recent journey? Is there anything distinctive about journeying by public bike as against other modes and if so what? What defines the public biking experience? What do they mean for you?
	Dockings stations you use (typically / sometimes) Routes you take? Experiences en route?
	What do you think of the bikes? And the system? Have you used it abroad?
	Any previous bicycling experience? When, where, how often? Do you have your own bike?
	Visual experiences..... What do you notice or observe on your journeys / what stands out in your mind? How does this compare to other urban journeys?
	Aural / Soundscapes. Describe what you hear when on your DB journey (comparing this with other journey modes).
	Smells & Tastes. What do you smell and taste while on a DB journey (comparing this with other journey modes).
	Describe your journey in terms of the bodily and emotional experience.
	Atmospheres. Describe the atmosphere of the streets of the city as experienced while using a DB. Does this differ from journeys by other modes?
	Any further thoughts on..... Bicycle use in the city / public transport / 'sustainable' transport / sustainability / active travel and public health arising from your use of DB?
	Do you ever meet people on your journeys and how does this compare to other urban journeys?
	Do you have any other thoughts or reflections on the *dublinbikes* you wish to share?
Additional questions and prompts (for interviewees Int28 to Int36)	
	Can you tell us a bit about your street or your neighbourhood?
	Can you remember when you first heard that public bikes were going to be introduced to your area? What was your reaction and the neighbourhood's reaction?
	Can you tell us more about your street following the introduction of the scheme?
	Do you notice much activity around the docking stations?

APPENDIX 4.8 – INTERVIEWEES

Short-hand Used in Thesis (Int no, Pseudonym, Nationality if not Irish, employment)	Interview Day, Date and Time	Duration (minutes)
(Int01, Ger, 20s, student)	Mon 16/Jan/2012, 14.00	18.5
(Int02, Terry, 40s, IT contractor)	Mon 16/Jan/2012, 18.15	15.5
(Int03, Richard, 50s, statistician)	Tue 17/Jan/2012, 13.15	14.0
(Int04, Maureen, 60s)	Wed 18/Jan/2012, 12.00	28.0
(Int05, Selina, 20s, marketing person)	Wed 18/Jan/2012, 13.00	12.0
(Int06, Seánín, 50s, tour guide)	Mon 23/Jan/2012, 13.30	36.0
(Int07, Ian, 40's, IT consultant)	Fri 24/Feb/2012,13.15 -	20.5
(Int08, Sandra, English, 30ish)	Tue 28/Feb/2012, 13.30	16.8
(Int09, Jurgen, German, 20s, PG student)	Tue 28/Feb/2012, 15.30	11.5
(Int10, Peter, English, 50's, union employee)	Fri 02/Mar/2012, 13.00	13.5
(FG11-1, Micheál, 50s, NGO employee) (FG11-2, Dennis, 20s, NGO employee) (FG11-3, Laurie, 30s, NGO employee) (FG11-4, Ciara, 30s, NGO employee) (FG11-5, James, 60s, NGO employee)	Fri 09/Mar/2012, 09.30	22.5
(Int12, Pawel, Polish, 30s, legal secretary)	Thu 19/Apr/2012, 11.30	18.0
(Int13, Miklos, Czech Republic, 30s, IT contractor)	Sat 21/April/2012, 13.00	18.5
(Int14, Alan, 20s, PG student)	Tue 24/Apr/2012, 14:30	14.5
(Int15, Audrey, 50s, librarian)	Tue 24/Apr/2012, 16:00	18.5
(Int16, Mary, 50s, banking employee)	Wed 25/Apr/2012, 12:45	11.5
(Int17, Joan, 30s, academic biochemist)	Fri 04/May/2012, 09:30	13.5
(Int18, Brad, American, 30s, transport planner)	Wed 09/May/2012, 18:00	13.5
(Int19, Dermot, 50s, employers' association rep)	Mon 14/May/2012, 12:30	12.7
(Int20, Danny, 30s, public servant)	Mon 26/Nov/2012, 11:15	25.0
(Int21, Maurice, 30s, software programmer)	Mon 26/Nov/2012, 18:15	27.5
(Int22, Paul, 40s, engineer)	Tue 27/Nov/2012, 13:00	24.3
(Int23, Lulia, 20s, graphic designer)	Tue 27/Nov/2012, 17:45	12.5
(Int24, Frank, 40s, business man (and former architect))	Thu 29/Nov/2012, 17:30	36.0
(Int25, Neil, Scottish, 40s, professional)	Fri 30/Nov/2012, 13:15	29.0
(Int26, Tom, 40s, technician)	Tue 04/Dec/2012, 14:00	11.5
(Int27, Joanne, 30s, college administrator)	Thu 06/Dec/2012, 10:45	15.5
(Int28, Patricia, 40s, counsellor)	Fri 24/May 2013	11.0
(Int29, Pete, 40s, comedian) [DOES NOT USE DBs]	Wed 29/May 2013	17.0
(Int30, Fionn, 30s, digital media SME person)	Fri 21/June 2013	38.5
(Int31, Julie, 50s, medical college employee)	Fri 21/June 2013	20.0
(Int32, Greg, 50s, film producer)	Wed 26/June 2013	12.8
(Int33, Amanda, 40s, PG student / advertising background)	Wed 26/June 2013	15.3
(Int34, Claire, film producer, 30s)	Thu 27/June 2013	10.6
(Int35, Daithi, retired, 70s) [DOES NOT USE DBs]	Tue 09/July 2013	20.8
(Int36, Joe, 50s)	Tue 09/July 2013	11.5

APPENDIX 4.9 – CODING CATEGORIES

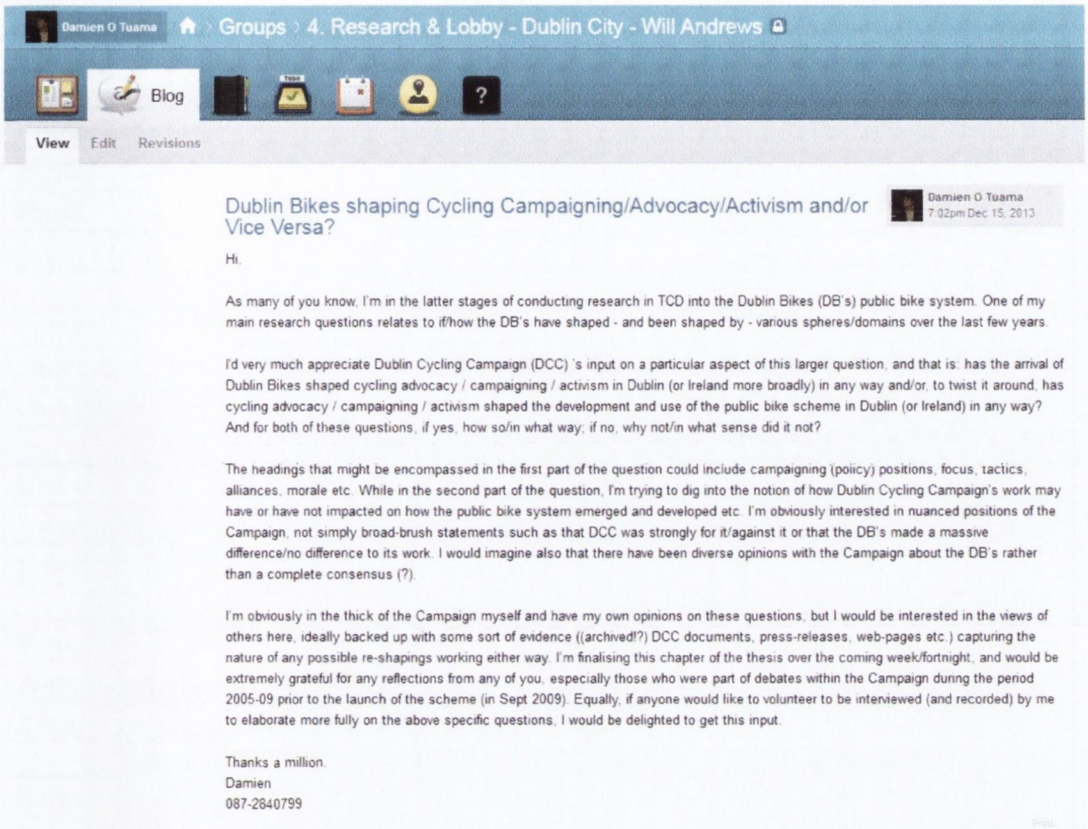
This is a screen shot showing my final NVivo coding categories used:



APPENDIX 4.10 – KEY INFORMANT INTERVIEWEES

	Key Informant	Position	Interview Type / Date	Duration (minutes)
KI#1	Tomás (Pseudynom)	J.C. Decaux employee working on bike redistribution and maintenance	Face-to-face interview 28/Nov 2013 (unrecorded)	30 (approx)
KI#2	Jason Frehill	Dublin City Council official (Planner) responsible for scheme planning and implementation	Face-to-face interview 02/Dec/2013 (recorded). Note that in the main body of text, unless otherwise stated, direct quotations or comments attributed to Jason Frehill refer to this interview. Elsewhere in the thesis I also refer to: - information provided by Mr. Frehill at a public lecture held on 17/Oct 2013 (Frehill, 2013c) - personal communication at a more informal meeting on 30/Oct 2013 (Frehill, 2013b) - personal communication by email on 04/Nov 2013 (Frehill, 2013a)	37.5
KI#3	Will Andrews	Chairperson (at time of planning and development phases of DB scheme) of the cycling advocacy group Dublin Cycling Campaign	Interview by email (as respondent had moved to New Zealand) 17/Dec/2013	n/a
KI#4	Andrew Montague	Dublin City Councillor and former Lord Mayor (Labour Party)	Face-to-face interview 27/Dec 2013 (recorded)	28.5

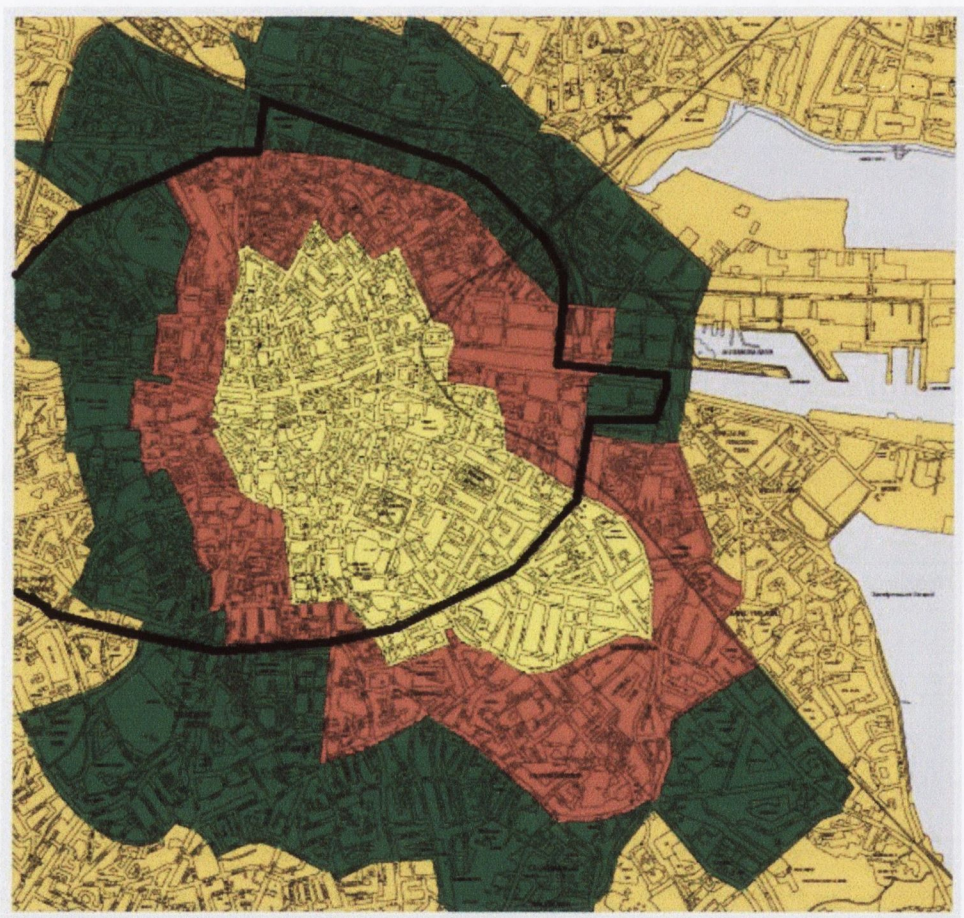
APPENDIX 4.11 – POSTING TO DUBLIN CYCLING CAMPAIGN 'INTRANET' (*OPEN ATRIUM* PLATFORM)



APPENDIX 7.1 – TARIFFED ON-STREET CAR PARKING IN DUBLIN

According to Dublin City Council (Meade, 2014), there are approximately 30,000 tariffed (i.e. pay for) car parking spaces in Dublin City. The figure is approximate / fairly fluid because of road-works etc. With reference to the map below, derived from the Council's official 'Tariff Zone' map (Dublin City Council, NDG), the number of spaces in each zone is (according to Meade):

- Yellow Zone - 7,000 spaces
- Red Zone - 7,200
- Orange Zone - 5,000
- Green Zone - 10,000
- Blue Zone – 800 (not shown here – refers to suburban villages)



Moore (2014) has estimated that the number of tariffed spaces within the canal cordon (shown in black) is approximately 12,670. The basis for this estimate is as follows:

- Yellow Zone: 7,000 x 80% =5,600
- Red Zone: 7,200 x 60% =4,320
- Orange Zone: 5,000 x 5% =250
- Green Zone: 10,000 x 25% =2500
- Blue Zone: 800 x 0% = 0

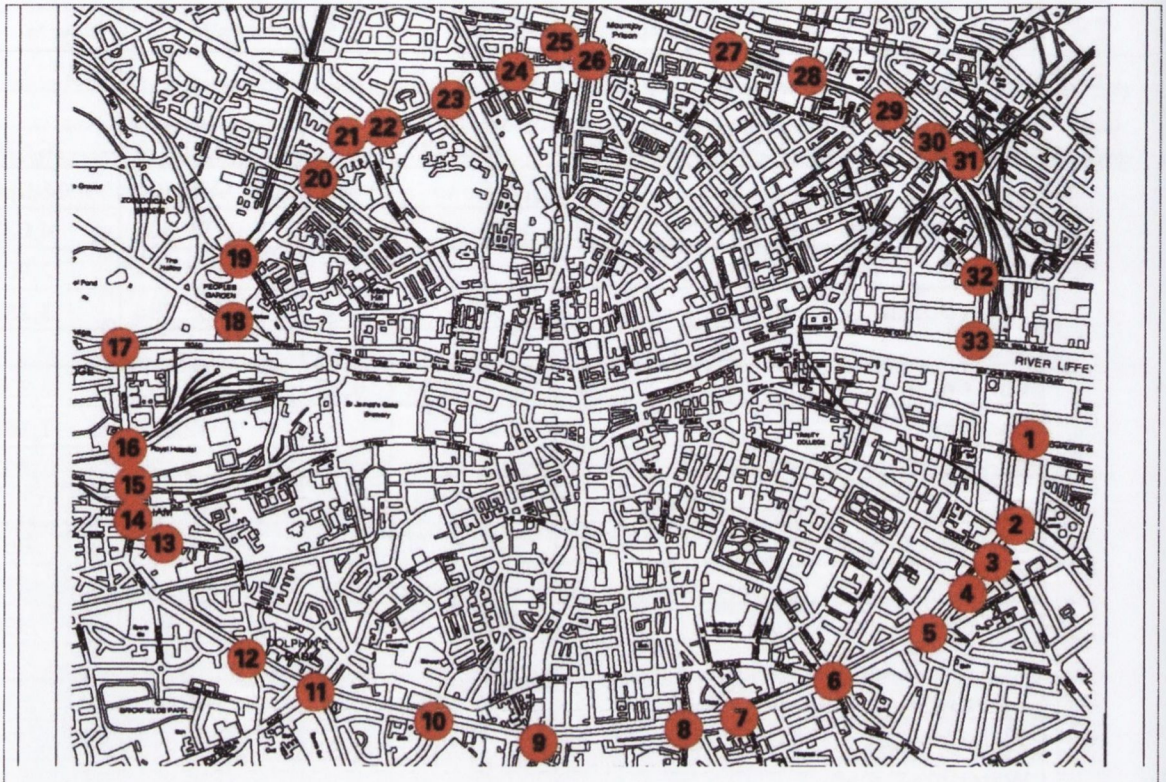
APPENDIX 7.2 – CYCLING LEVELS IN 2006 AND 2011

	Overall	Bicycle 2006[266]	%	Overall	Bicycle 2011	%
Dublin Co. and City	*560,492*	*21,145*	*3.77*	529,812	26,670	5.03
Dublin City				219,700	16,960	7.72
DLRCC				86,304	4,022	4.66
Fingal				117,914	2,401	2.04
South Dublin				105,894	3,287	3.10
Cork Co. and City	212,791	2,012	0.95	204,752	2,325	1.14
Cork City				42,078	1,163	2.76
Cork County				162,674	1,162	0.71
-	-	-	-	-	-	-
Limerick Co. and City	79,254	1,174	1.48	70,328	867	1.23
Limerick City				18,170	471	2.59
Limerick County				52,158	396	0.76
-	-	-	-	-	-	-
Waterford Co. and City	45,570	601	1.32	41,426	525	1.27
Waterford City				16,573	321	1.94
Waterford County				24,853	204	0.82
-	-	-	-	-	-	-
Galway Co. and City	102,062	2,045	2.00	97,431	1,903	1.95
Galway City				29,821	1,388	4.65
Galway County				67,610	515	0.76
-	-	-	-	-	-	-
State	1,892,787	36,306	1.92	1,778,400	39,803	2.24

2006 and 2011 data for the City & County of each of Dublin, Cork, Limerick, Waterford and Galway. Data from Central Statistics Office (2007) and Central Statistics Office (2012a)

[266]Note also that it was not possible to get comparable disaggregated data for 2006.

APPENDIX 7.3 – CANAL CORDON COUNT LOCATIONS



Canal Cordon Count Locations (Dublin City Council, 2013c: 2)

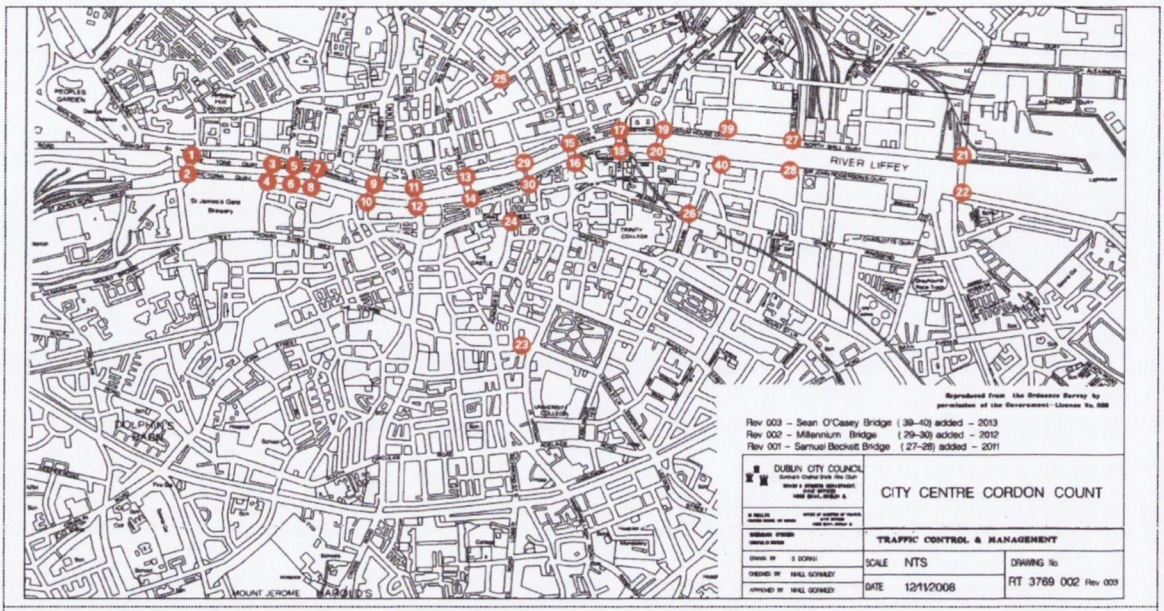
APPENDIX 7.4 – CANAL CORDON DATA & ANALYSIS

	Year (Nov)	No. of Cyclists	Change over previous year	% change on previous year
Pre-DB	**1997**	5,628	n/a	
Pre-DB	**1998**	4,579	-1049	-18.64
Pre-DB	**1999**	5,384	805	17.58
Pre-DB	**2000**	4,464	-920	-17.09
Pre-DB	**2001**	5,085	621	13.91
Pre-DB	**2002**	4,714	-371	-7.30
Pre-DB	**2003**	4,711	-3	-0.06
Pre-DB	**2004**	3,941	-770	-16.34
Pre-DB	**2005**	4,404	463	11.75
Pre-DB	**2006**	4,839	435	9.88
Pre-DB	**2007**	5,676	837	17.30
Pre-DB	**2008**	6,143	467	8.23
Post-DB	**2009**	6,326	183	2.98
Post-DB	**2010**	5,952	-374	-5.91
Post-DB	**2011**	6,870	918	15.42
Post-DB	**2012**	7,943	1073	15.62
Post-DB	**2013**	9,061	1118	14.08

Canal Cordon Count data in the left land column (Dublin City Council, 2013c, Dublin City Council, 2014c)[267]

[267]Note that the split horizontal line in the table differentiates between the datasets collected before and after the opening of the public bike scheme.

APPENDIX 7.5 – CITY CENTRE CORDON LOCATIONS



Locations for City Centre Cordon Count (Dublin City Council, 2013b: 6)

APPENDIX 7.6 – CITY CENTRE CORDON DATA

	Location on City Centre Cordon	2008	2009	2010	2011	2012	2013	2012-13 % change
1	Wolfe Tone Quay / Frank Sherwin Bridge	803	844	1018	1159	1346	1889	40.3
2	Frank Sherwin Bridge / Victoria Quay	610	778	639	785	1065	1372	28.8
3	Ellis Quay / Watling St Bridge	617	514	769	871	1126	1197	6.3
4	Usher's Island / Watling St Bridge	498	446	612	718	836	1160	38.8
5	Blackhall Place / Ellis Quay	976	926	1143	1390	1550	1656	6.8
6	James Joyce Bridge / Usher's Island	617	607	558	882	983	1236	25.7
7	Queen Street / Arran Quay	1076	904	1246	1234	1583	1712	8.1
8	Queen Street / Usher's Quay	748	667	837	984	1188	1420	19.5
9	Church Street / Inn's Quay	1758	1363	1786	1813	2332	2878	23.4
10	Merchant's Quay / Usher's Quay /Church St	1242	1108	1500	1493	1900	2120	11.6
11	Inns Quay / Ormond Qy Upr / Chancery Place	1659	1764	1833	1984	2121	2734	28.9
12	Wood Quay / Merchant's Quay / Winetavern St	1297	1468	1212	1328	1671	2031	21.5
13	Ormond Quay / Capel St / Grattan Bridge	1676	2150	1918	2133	2645	3181	20.3
14	Wellington Quay / Essex Quay	1467	1517	1797	1799	2158	2439	13
15	O'Connell St Lower / Eden Quay	2595	1821	3246	2250	5371	4770	-11.2
16	D'Olier St / Aston Quay / Burgh Quay	1974	1354	2190	3305	3985	4637	16.4
17	Butt Bridge / Beresford Pl / Custom Hse Quay	1418	1077	1567	1420	1400	2020	44.2
18	Butt Bridge / Burgh Qy / Georges Qy / Tara St	1233	724	926	1346	1362	1543	13.2
19	Memorial Rd / Custom Hse Qy / George's Qy	1576	1971	1649	1733	2007	2599	29.5
20	Moss St / City Quay / George's Quay	1381	1546	1469	589	1780	2036	14.4
21	East Link Bridge / Nth Wall Qy / East Wall Rd	804	536	642	657	671	1000	49
22	East Link Bridge	352	469	614	523	554	914	65
23	Cuffe Street / Cuffe Lane	1342	1136	1237	1385	1550	1542	-0.5
24	Dame Street / George's Street	2887	2274	2975	2736	3820	3878	1.5
25	Parnell Street / Dominick Street	1028	841	729	868	1415	1387	-2
26	Pearse Street / Westland Row	2135	1120	1473	2101	2241	2891	29
27	Samuel Beckett Bridge (North)				1084	1692	2669	57.7
28	Samuel Beckett Bridge (South)				1460	1920	2374	23.6
29	Millennium Bridge					461	496	7.6
39	Sean O'Casey Bridge						560	
A	**TOTALS (excluding rows 29 to 30 inclusive)**	**33769**	**29925**	**35585**	**40030**	**52272**	**61285**	
B	*TOTALS (excluding rows 27 to 30 inclusive)*	*33769*	*29925*	*35585*	*37486*	*48660*	*56242*	
	Year on year change with Tot A vs previous year	n/a	-3844	5660	4445	12242	9013	
	Year on year % change	**n/a**	**-12.85**	**15.91**	**11.10**	**23.42**	**14.71**	
	Year on year change with Tot B vs previous year	*n/a*	*-3844*	*5660*	*1901*	*11174*	*7582*	
	Year on year % change	*n/a*	*-12.85*	*15.91*	*4.75*	*21.38*	*12.37*	

Total number of pedal cyclists 07:00 to 19:00 with counts taken at approx.. 30 city centre locations in May of each of the years (on a Tuesday, Wednesday or Thursday). Data from Dublin City Council (2013b) and reworked over the last few rows.

APPENDIX 7.7 – CYCLE COUNTS DATA ANALYSIS

A simple analysis of *city centre cordon data* (Appendix 7.6) shows that between May 2009 (pre-DB launch) and May 2010 (post-DB launch) there was an increase of **5660** in the numbers of bicycles counted, corresponding to a change of **+16%.** For comparison[268], between May 2008 and May 2009 there was a change of **-13%**, between May 2010 and May 2011 there was change of **+11%**, for the following year (i.e. between May 2011 and May 2012) it was **+23%**, and finally for the following year again (i.e. between May 2012 and May 2013) it was **+15%**.

On the other hand, if we carry out a simple analysis of *the canal cordon data* (Appendix 7.4) we see a slightly different pattern after the introduction of the public bikes. Between Nov 2008 (pre-DB launch) and Nov. 2009 (post-DB launch), the canal data shows a change of **+3%** - i.e. from 6143 to 6326. The following year (i.e. between Nov. 2009 and Nov. 2010), there a change of **-6%** (that is, from 6326 to 5952) and the following year again (i.e. between Nov. 2010 and Nov. 2011), a change of **+15%** (that is, from 5952 to 6870). Further changes of **+15%** were recorded the following year i.e. between Nov. 2011 and Nov. 2012) and **+14%** the following year again i.e. between Nov. 2012 and Nov. 2013).

Reflecting on the above data and analyses, I note the following broad observations and deductions while acknowledging difficulties in interpreting and comparing the datasets:

(a) The *city centre data* shows a steady increase over the period May 2009 to May 2013: the average growth in cycling numbers over the (four year) period 2009 to 2013 was **+16%**[269]. These figures will include cross city DB journeys.

(b) The canal cordon counts show average growth rate of approx. **8%**[270] for the (five year) period Nov. 2008 to Nov. 2013. These figures generally *will not* include DB journeys because the cordon lies just outside the locations of all DB stations, and at morning peak DB journeys are mainly inbound.

(c) Since the canal counts are carried out over two days only in November[271] and the city count over three days in May[272], weather conditions can impact (to different degrees) on the numbers. The canal cordon count data for year 2010 would appear to be somewhat anomalous, but it is unclear why this is so (Gormley, 2014).

(d) While there is a consistency in the month during which *each of the two datasets is compiled,* those periods are six months apart.

(e) There is also the slight complicating factor of the two additional count locations in the city centre counts from 2011 onwards, following the opening of a new bridge.

(f) The city centre dataset will multiple-count not only the same cyclists (on different trips over the course of the day) but also the same trips, depending on the routes taken (i.e. depending on how many count locations were passed).

(g) There was an increase in the number of DBs available (450 bikes in 2009 and 550 in 2011). Dublin City Council note the following average number of daily rentals of DBs over the periods of the city centre counts:

Dates of city centre count	Average no.of rentals per day
11-13 May 2010	4,474
10 -12 May 2011	5,846
15 -17 May 2012	5,864
9 - 30 May 2013	6,088

Dublin Bike Rentals (Dublin City Council, 2013b: 6)

[268] It should be noted however that the data for 2011, 2012 and 2013 include two additional counting points (locations 27 and 28 above) so the total figures are not directly comparable. To analyse the data *while excluding locations 27 and 28* is not entirely satisfactory either as a cyclist conducting trips in the years 2011, 2012 and 2013 using the (just built) Samuel Beckett bridge *might previously have used a different bridge for the same trip and therefore would have been counted elsewhere.* Therefore, if we exclude the data from the Samuel Beckett Bridge (locations 27 and 28) in our totals, we may miss some trips entirely that may have been counted in previous years.

[269] I.e. for Totals A = 16.28 = (15.91+11.10+23.42+14.71)/4; For Totals B = 13.60 = (15.91 + 4.75 + 21.38 + 12.37)/4;

[270] I.e. 8.44 = (2.98 – 5.91 + 15.42 + 15.62 + 14.08)/5;

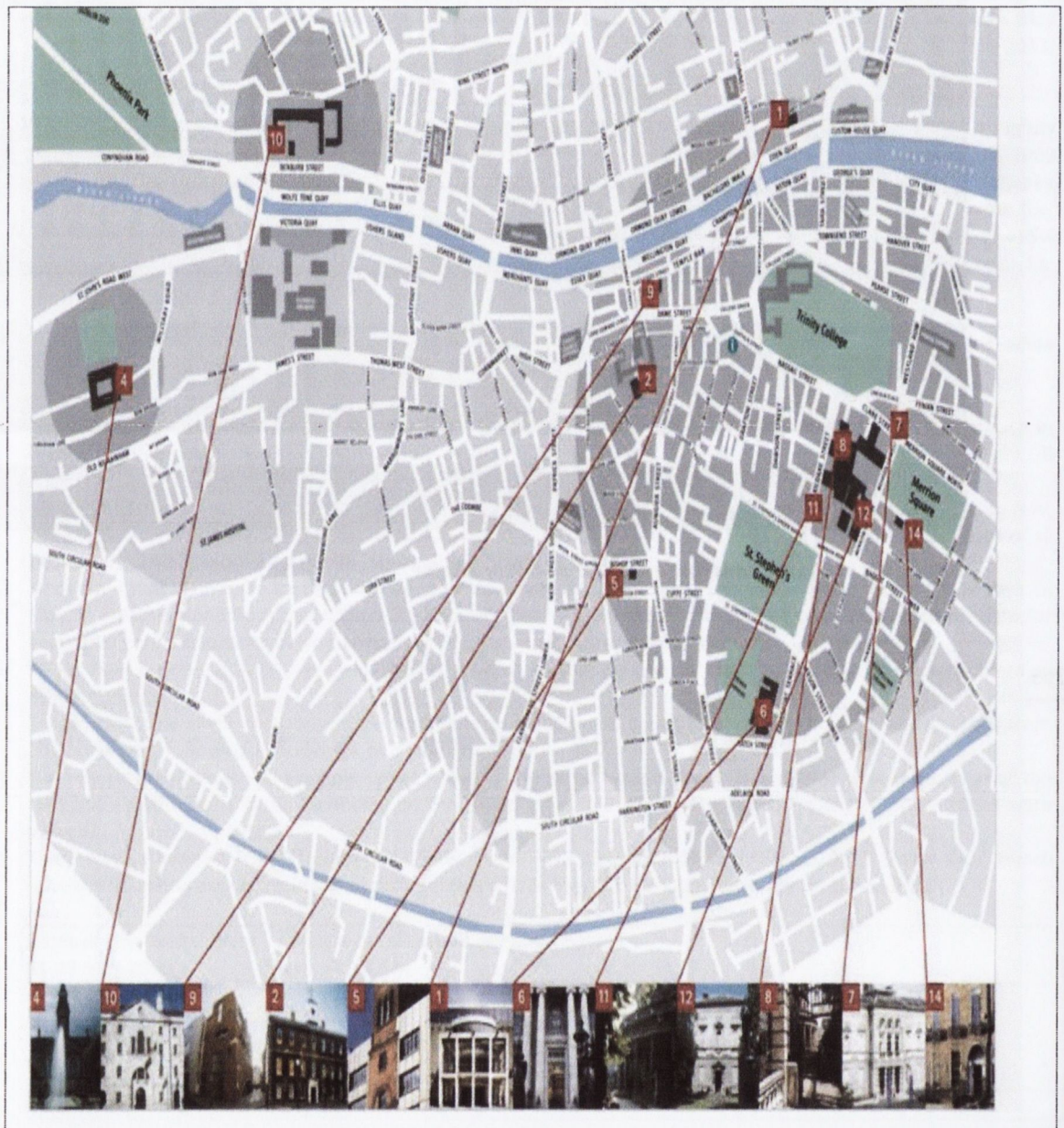
[271] "The canal counts take place on two days in November either a Tuesday, Wednesday or Thursday (not necessarily consecutive days) and the average of the two days is used. The figures normally don't vary by very much over the two days. GORMLEY, N. 2014. *RE: Personal communication - by email 26/Feb 2014.*

[272] "For the city centre counts each location has a count done from 7 am to 7 pm on just one day - either a Tuesday, Wednesday or Thursday in May" (ibid.).

APPENDIX 7.8 – CULTURE NIGHT 2013 GRAPHICS

Culture Night 2013 - Transport available on Culture Night

APPENDIX 7.9 – LOCATIONS OF CULTURAL INSTITUTIONS



Map of Dublin Cultural Institutions (Council of National Cultural Institutions, Undated)

APPENDIX 7.10 – NATIONAL CULTURAL INSTITUTIONS / ONLINE DIRECTIONS

	In DB zone ?	Mention of DB's on "How to find us" / "Location" / "Transport" webpages?	Reference
Abbey Theatre	Yes	No mention of DB's No mention of bicycle travel. [Walk, bus, Luas/tram, DART/train, car / car parking and airport mentioned]	(Abbey Theatre, 2013)
Chester Beatty Library	Yes	No mention of DB's No mention of bicycle travel. [Walk, bus, Luas/tram, DART/train mentioned]	(Chester Beatty Library, 2013)
Irish Museum of Modern Art	No	No mention of DB's (note outside area) No mention of bicycle travel. [Walk, bus, Luas/tram, DART/train and car/car parking mentioned]	(Irish Museum of Modern Art, 2013)
National Archives of Ireland	Yes	No mention of DB's (note outside area) No mention of bicycle travel. [Walk, Luas/tram and car/car parking mentioned]	(National Archives of Ireland, 2013)
National Concert Hall	Yes	DB's mentioned – see below. No mention of (non-DB) bicycle travel. [Walk, bus + coach, Luas/tram, DART/train, car / car parking and airport mentioned] *Dublin Bikes - Why not keep it green and use one of the Dublin Bikes available at various points around the city. There is a Dublin Bikes station directly outside The National Concert Hall. There are also two stations on St Stephen's Green both of which have Credit Card Terminals. For more information, log on to www.dublinbikes.ie*	(National Concert Hall, 2013)
National Gallery of Ireland	Yes	DB's mentioned – see below. No mention of (non-DB) bicycle travel. [Walk, bus, Luas/tram, DART/train, car / car parking mentioned] *By dublinbikes: There are two dublinbikes stations beside the Gallery, located at Clare Street and at Merrion Square West.*	(National Gallery of Ireland, Undated)
National Library of Ireland	Yes	Only a map shown. No specific mentioning of modes.	(National Library of Ireland, 2013)
National Photographic Archive	Yes	Only a map shown. No specific mentioning of modes.* *except:*The National Library Photographic Archive is located in Meeting House Square in Temple Bar, a short walk from the Library's other buildings on Kildare Street.*	(National Library of Ireland, 2013)

National Museum of Ireland – Decorative Arts & History	No (just outside zone)	DB's mentioned – see below. Non-DB bicycles mentioned – see below. [Walk, bus, Luas/tram, DART/train, car / car parking + GPS coordinates mentioned.] *By BicycleOpen Google Maps to get detailed cycling directions from your location.* *Cycle racks are available in the Museum parking area.Using Dublin Bikes* *The nearest bike station to the Museum is Station 35, Smithfield.Walking directions from Smithfield*	(National Museum of Ireland, 2013b)
National Museum of Ireland – Archaelogy	Yes	DB's mentioned – see below. Non-DB bicycles mentioned – see below. [Walk, bus, Luas/tram, DART/train, car / car parking + GPS coordinates mentioned.] *By BicycleOpen Google Maps to get detailed cycling directions to the National Museum of Ireland - Archaeology.Cycle racks are available to the left of the steps up to the entrance to the Museum. Using Dublin BikesThe nearest bike station to the Museum is Station 21, Leinster Street South.*	(National Museum of Ireland, 2013a)
National Museum of Ireland – Natural History	Yes	DB's mentioned – see below. Non-DB bicycles mentioned – see below. [Walk, bus, Luas/tram, DART/train, car / car parking + GPS coordinates mentioned.] *By BicycleOpen Google Maps to get detailed cycling directions to the National Museum of Ireland - Natural History.Cycle racks are available near the Museum entrance. Using Dublin BikesThe nearest bike station to the Museum is Station 26, Merrion Square West*	(National Museum of Ireland, 2013c)
The Arts Council	Yes	Only an address is provided. No further details on finding them etc.	(Arts Council, Undated)

APPENDIX 7.11 – THIRD LEVEL COLLEGES IN DUBLIN / ONLINE DIRECTIONS

	In DB zone? 44 stat's)	Mention of DB's on "How to find us" / "Location" / "Transport" / "Directions" webpage(s)?	Reference
American College Dublin	Yes	No mention of DB's No mention of bicycle travel. [Walk, bus, Luas/tram, DART/train mentioned]	(American College Dublin, Undated)
College of Computer Training		Address and embedded Google Map provided. No specific mentioning of modes	(College of Computer Training (CCT), Undated)
Dublin Business School & DBS School of Arts		No mention of DB's No mention of bicycle travel. [Walk, bus, Luas/tram, DART/train mentioned]	(Dublin Business School, 2013)
Dublin Institute of Technology		DB's mentioned – see below. Non-DB bicycles mentioned – see below. [Walk, bus, Luas/tram, DART/train + journey planners + cycling maps + carshare info. (Very comprehensive)] *Walking and Cycling:To check the fastest routes for walking or cycling to college there is a new journey planner at Hit the Road.ie You will be provided with a number of routes to get you to your destination using various combinations of transport modes including the shortest possible route; the estimated time for your journey; and even the reduction in your carbon emissions! Check it out. The map below shows all the cycleing facilities in Dublin. Cycle Lane Map - OpenCycleMap.org Feel like cycling but don't have your own bike? We've got that covered too! DublinBikes provide very cheap city wide bike rental. There are a number of bike stations either outside or in close proximity to the main DIT Campuses. The scheme is €10 for year membership or if you're just visiting it's only€2 for 3 days usage! Find out more at DublinBikes.ie*	(Dublin Institute of Technology, 2012)
Grafton College of Management Sciences	Yes	No mention of DB's No mention of bicycle travel. [Bus routes mentioned only]	(Grafton College, 2013)
Griffith College	No (just outside)	No mention of DB's No mention of bicycle travel. [Bus, Luas/tram, and car/car parking mentioned]	(Griffith College, Undated)
IBAT College Dublin	Yes (for city centre campus)	No mention of DB's No mention of bicycle travel. [Bus, Luas/tram, DART/train and car/car parking mentioned]	(IBAT College Dublin, 2012)

ICD Business School	Yes	Only the address shown. No specific mentioning of modes.	(ICD Business School, 2011)
Independent Colleges, Dublin	Yes	No mention of DB's No mention of bicycle travel. [Walk, Bus, Luas/tram, DART/train mentioned]	(Independent Colleges Ltd, 2012)
National College of Art and Design	No (just outside – but soon to change)	Only a (Google) map shown. No specific mentioning of modes.	(The National College of Art & Design, 2013)
National College of Ireland	No (just outside – soon to change)	No mention of DB's No mention of bicycle travel. [Bus, Luas/tram, DART/train and car/car parking mentioned]	(National College of Ireland, 2013)
Portobello Institute	Yes	Address and embedded Google Map provided. No specific mentioning of modes	(Portobello Institute, 2013)
Royal College of Surgeons of Ireland	Yes	DB's mentioned – see below. Non-DB bicycles mentioned – see below. [Bus, Luas/tram, DART/train mentioned.] *Public Bike Scheme The Public Bike Scheme provides 40 public bike stations around Dublin city, with 450 bikes available for general public use. You can find out more about how you can collect, return and pay the small fee for your public bike use across the city from the website http://www.dublincitycycling.ie/.* *Public Transport There are three main forms of public transport in Dublin: Dublin Bus, the DART and the LUAS. Cycling is also a popular (and environmentally friendly) alternative.*	(Royal College of Surgeons in Ireland, Undated)
Science Gallery	Yes	DB's mentioned – see below. No mention of (non-DB) bicycle travel. [Walk, bus, DART/train, car / car parking mentioned] *Dublin Bike The closest Dublin Bike station is right outside on Pearse Street dublinbikes.ie*	(Science Gallery, Undated)
Trinity College Dublin	Yes	No mention of DB's No mention of bicycle travel. [Walk, bus, Luas/tram, DART/train, car / car parking, ferry(port) & air(port) mentioned]	(Trinity College Dublin, 2009)

APPENDIX 7.12 – IMAGES OF MOBILITY AND POWER: OPENING SEQUENCES OF *THE APPRENTICE*

APPENDIX 8.1 – DUBLINBIKES EXTENSION MAP 2013-2014

dublinbikes

Existing dublinbikes stations

1 Chatham Street
2 Blessington Street
3 Bolton Street
4 Greek Street
5 Charlemont Place
6 Christchurch Place
7 High Street
8 Custom House Quay
9 Exchequer Street
10 Dame Street
11 Earlsfort Terrace
12 Eccles Street
13 Fitzwilliam Square West
14 Fownes Street Upper
15 Hardwicke Street
16 Georges Quay
17 Golden Lane
18 Grantham Street
19 Herbert Place
20 James Street East
21 Leinster Street South
22 Townsend Street
23 Custom House
24 Cathal Brugha Street
25 Merrion Square East
26 Merrion Square West
27 Molesworth Street
28 Mountjoy Square West
29 Ormond Quay Upper
30 Parnell Square North
31 Parnell Street
32 Pearse Street
33 Princes Street
34 Portobello Harbour
35 Smithfield
36 St Stephen's Green East
37 St Stephen's Green South
38 Talbot Street*
39 Wilton Terrace
40 Jervis Street
41 Harcourt Terrace
42 Smithfield North
43 Portobello Road
44 Upper Sherrard Street

* This station is being extended as part of the expansion.

dublinbikes expansion stations 2013/2014

45 Benson Street
46 Lime Street
47 City Quay
48 Hanover Quay
49 Grand Canal Dock
50 Barrow Street
51 Mount Street Lower
52 Grattan Street
53 Grand Canal Street Lower
54 Fenian Street
55 Sandwith Street
56 Georges Dock
57 North Wall Quay at Excise Walk
58 North Wall Quay at the Convention Centre
59 North Wall Quay at the New Central Bank
60 North Wall Quay at the O2
61 South Dock Road
62 Linear Park
63 St. John's Street
64 Oliver Bond Street
65 James Street
66 Market Street South
67 James Hospital
68 Military Road at the Royal Hospital
69 Kilmainham Lane
70 Emmet Road
71 Inchicore Road
72 Parkgate Street One at the Bridge
73 Parkgate Street Two at Triangle
74 Liffey Street West at Collins Barracks
75 Blackhall Place
76 Heuston Station One at the River
77 Heuston Station Two at Drivers Accomodation
78 Heuston Station Three at Parking
79 St James Hospital - Central
80 Francis Street
81 Brookfield Road
82 SCR at Rothe Abbey
83 Mount Brown
84 College Green
85 Dame Court
86 Kevin Street
87 Fitzwilliam Square East
88 St Stephen's Green South at Newman House
89 Clonmel Street
90 Hatch Street
91 Setanta Place West
92 Setanta Place East
93 York Street West
94 York Street East
95 Strand Street Great
96 Deverell Place
97 Wolfe Tone Street
98 Mater Hospital - NCR New Entrance
99 Denmark Street Great
100 North Circular Road
101 Hardwicke Place
102 Eccles Street East

JCDecaux
Comhairle Cathrach Bhaile Átha Cliath Dublin City Council
Údarás Náisiúnta Iompair National Transport Authority

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