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Becky Faith MSc

**HOW DOES THE USE OF MOBILE PHONES BY 16-24
YEAR OLD SOCIALLY EXCLUDED WOMEN AFFECT
THEIR CAPABILITIES?**

THESIS SUBMITTED FOR THE DEGREE OF DOCTOR OF
PHILOSOPHY

Department of Computing and Communications

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Open University

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Abstract

This research looks at the impact of mobile phone use on the lives and opportunities of 16-24 year-old socially excluded women, using a novel, cross-disciplinary framework of the capability approach and affordances.

Fieldwork took the form of semi-structured interviews in 2013-14 with 30 women between the ages of 16-24, and four youth workers. The instrumental affordances of mobile phones are examined to understand whether they provide a means to address issues relating to work, health, education and housing. The impact of the maintenance and communicative affordances of mobile phones on women's lives and relationships is also critically examined.

The fieldwork showed that respondents were making limited use of instrumental affordances to address issues of social exclusion. Poverty impacted on women's mobile phone use: they lacked funds to repair their phones and experienced intermittent connectivity. Respondents were often paying a high proportion of their income for their mobile phones, going over call limits and breaking contracts. Mobile phones were contributing to a 'digitally gendered' identity, including technology-facilitated sexual harassment and gendered communicative practices.

Economic and social circumstances meant that half of respondents were reliant on these devices for their Internet connection, and thus for a wide range of instrumental purposes. This demonstrates the value of research on women's use of mobile phones that is alive not just to gendered technology use, but also to structural issues of class and poverty.

This study shows the strength of cross-disciplinary approaches to studies on the social effects of inequalities of access to digital tools, particularly in the use of theories from the field of human computer interaction to ‘materialise’ understanding of the relationship between social and digital exclusion. It also makes a significant contribution to knowledge on the use of mobile phones by socially excluded young women in the UK.

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1 INTRODUCTION

Do you have access to a computer at home?

I do not. But – phone. It does everything.

Is there anything you can't do on it?

There's nothing I can't do on my phone.

Courtney was 20 years old, and she and her small baby were homeless. Courtney had been sleeping on friends' sofas for a fortnight while she tried to find a place to live, and she was using her iPhone 5 to stay connected with her family and friends. Yet at the time that fieldwork for this research was being carried out, there were only two affordable homes available in the Southern English city of Brighton for young people receiving full housing benefit (Brighton & Hove City Council Housing Strategy Team, 2014). Had Courtney been able to find affordable childcare for her baby she would have been entering a casualised job market (Trades Union Congress, 2014), in which there were there have been more young women than men out of work for ten years (Young Women's Trust, 2014b).

This research looks at the difference mobile phones make to the lives and opportunities of women like Courtney. Given the computing power in her phone, and the many functions used by Courtney – taking photographs, communicating instantly with her family in Australia, its diary and alarm function – how did her use of this device really impact on her life? The development economist Amartya Sen describes mobile phones as “generally freedom-enhancing” (2010). But is Courtney’s iPhone contract of £34 a month freedom enhancing asset – or a drain on her limited resources?

Fieldwork took place between August 2013 and September 2014 and took the form of semi-structured interviews in the author’s home city of Brighton with 30 women

between the ages of 16-24. All these women could be seen as ‘socially-excluded’ in some way: whether through being unemployed, homeless, living on a low income in insecure housing or experiencing teenage single motherhood. Interviews took place in drop-in advice centres in central Brighton. Four intermediaries working with these young women, who were specialists in housing, employment, and in supporting women at risk of sexual violence, were also interviewed.

This research looks at how the *instrumental, maintenance and communicative affordances* of mobile technology might provide young women with possibilities for action, or impede them from taking action in particular to address issues of social exclusion related to employability, health, education and housing. A novel theoretical framework, which combines the theories of affordances and capabilities, enables a critical examination of the role of mobile technology in contributing to, or impeding, people’s capabilities to lead lives they value.

The main research question is as follows:

RQ1 How does the use of mobile phones by 16-24 year old socially excluded women affect their capabilities?

With the sub-questions:

RQ2. How do the instrumental affordances of mobile phones affect the capabilities of 16-24 year old socially excluded women?

RQ3. How do the maintenance affordances of mobile phones affect the capabilities of 16-24 year old socially excluded women?

RQ4. How do the communicative affordances of mobile phones affect the capabilities of 16-24 year old socially excluded women?

1.1 Research approach

This research is concerned with the use of mobile phones by young, socially excluded women in the UK and is framed by the inequalities they are experiencing. It is driven by gaps that have been identified in the literature on the use of technology – and in particular mobile phones – by these young women. The term socially excluded is used as it implies a view of deprivation and poverty that is complex and multidimensional.

This study uses qualitative approaches to examine how the instrumental, maintenance and communicative affordances of mobile phones affect young women's capabilities to lead lives they value. These young women were aged 16-24 at the time of fieldwork and were experiencing homelessness, single motherhood and/or unemployment. This research is concerned with investigating if, and how, mobile phones might be helping poorer young women overcome the inequality they are experiencing in some aspects of their lives, or indeed how these devices might be exacerbating this inequality. It also looks how the use of these devices might be helping to produce and manage their gendered identity as young women (Yates and Lockley, 2008, p.81).

In looking specifically at young women, this research responds to Green and Singleton's call to 'gender' the digital age in the face of what they see as an absence of gender in mainstream digital age theory (2013). It also addresses the absence of research that is "*specifically designed to study the role, meaning, representations, models, and practices of use of the mobile phone beginning from women's life conditions*" (Fortunati, 2009, p.23). Feminist approaches underpin this research: a

commitment described by Standing to “...*translate between the private world of women and the public world of academia, politics and policy*” (1998, p.193). These approaches influenced the decision to use semi-structured interviews, which gave respondents the opportunity to talk about their lives on their own terms, giving voice to their own experiences (Ireland *et al.*, 2009).

1.2 Theoretical perspective

Feminist theory offers extensive scholarship aiming to make sense of the “*complexity of the semiotic and material conditions in which women operate*” (Braidotti, 2011 p.66). But two threads in feminist thought in particular inform the overall goals and design of this research: materialist feminism and technofeminism. Materialist theories are a means to analyse the inequalities experienced by the women in this study – such as issues of low pay related to gender inequality – since they provide a structural account of the “*systems of power and control which give rise to sets of social relations*” (Alsop *et al.*, 2002 p.65).

Technofeminism understands technology as both a source and a consequence of gender relations (Wajcman, 2004) which help us to understand how “*gender relations around family, friendship and work are inscribed and revealed*” (Green and Singleton, 2013, p.43) in the use of mobile phones by young women. This is reflected in the research design: the research was not designed to compare the experiences of men and women. Instead, an interest in the specific structural inequalities experienced by some young women led to the decision to only interview homeless, unemployed and low-income women.

Whilst the overall PhD research was inspired by the concerns of materialist feminism, the findings were analysed using a novel cross-disciplinary theoretical framework of affordances and capabilities (see *Table 1. Thesis structure and theoretical framework*). This new framework also informed the choice of methodology. The decision to combine these two concepts was, in part, inspired by the dynamic technological environment that respondents in this study are living in, which has seen a rapid uptake in the adoption of Smartphones amongst young people. This follows Selwyn (2012), who suggests that it is important when writing about young people and digital technology to use a “*hybrid assemblage*” (Amin and Thrift, 2005 p.223) of theoretical perspectives, rather than adhering tightly to one theory. The use of a combination of theories is also inspired by Jackson’s suggestion that an open approach to theory – rather than an insistence on what she describes as “*theoretical purity*” – works well with feminist, structural research as it allows for an analysis of “*women’s everyday existence and the meanings women give to their lives without losing sight of structural patterns of dominance and subordination*” (2001, p.286).

The first concept used in this study is the capability approach. The approach is a means to evaluate how mobile phones might help women nurture and exercise their capabilities to lead lives they value: it allows us to understand the lives and choices made by young women, whilst “*insisting on the distinctive perspective individuals have on the world in which they live*” (Couldry, 2010 p.41). There is a body of literature from the field of information and communication technology for development (ICT4D) that uses the approach as an evaluative framework to look at the adoption of technologies in marginalised communities (Kleine *et al.*, 2012; Gigler, 2015; Zheng and Stahl, 2012).

Secondly, the notion of affordances has been widely used across the social sciences (e.g. Hutchby, 2001) and in the field of human computer interaction (HCI) (e.g. Sun and Hart-Davidson, 2014) to describe the possibilities for action offered by a technology. The concept of affordances is a way to explore the relationship between society, devices and individuals: grounded in an understanding that this is a fluid, co-produced relationship (Pinch, 2009), that these devices “*are simultaneously shaped by the social world, and can in turn become agents that shape that world.*” (Savage *et al.*, 2010 p.2). So, for example, looking at the affordances of mobile phones illuminates how issues of maintenance, repair and credit impact on women’s capabilities to use these devices.

These two theories are each in and of themselves extensive arenas of multidisciplinary academic scholarship, with debates and controversies about their definition and use. The next section briefly describes the aspects of each theory that have been used in this study; firstly the ‘critical’ capability approach and secondly instrumental, maintenance and communicative affordances.

1.2.1 The capability approach

The capability approach was developed by the economist Amartya Sen as a way to understand and analyse how people might live lives that they value (Sen, 1999). In recent years it has been adopted as a framework to evaluate the impact of a technology, or social projects using technology (Kleine, 2013; Oosterlaken, 2012). It has been argued that it provides a normative framework to unpack the relationship between technology and social exclusion (Zheng and Walsham, 2008). The effective use of mobile phones could be seen as part of an individual’s capability set: enabling a person to take advantage of other resources to further their valued goals in life (Sen,

2010). However this process depends on the presence of certain personal, social and environmental conversion factors, which enable a person to transform a resource such as a mobile phone into capabilities, which may then be realised to achieve functionings (realised achievements and fulfilled expectations).

Since its inception, the capability approach has been widely used in both policy and academic contexts and has been operationalised by Nussbaum into a list of ten central capabilities. Nussbaum's list of central capabilities is used to frame the findings of this research and to evaluate the use of mobile phones by respondents.

The Central Human Capabilities

1. Life. Being able to live to the end of a human life of normal length; not dying prematurely, or before one's life is so reduced as to be not worth living.
2. Bodily Health. Being able to have good health, including reproductive health; to be adequately nourished; to have adequate shelter.
3. Bodily Integrity. Being able to move freely from place to place; to be secure against violent assault, including sexual assault and domestic violence; having opportunities for sexual satisfaction and for choice in matters of reproduction.
4. Senses, Imagination, and Thought. Being able to use the senses, to imagine, think, and reason – and to do these things in a “truly human” way, a way informed and cultivated by an adequate education, including, but by no means limited to, literacy and basic mathematical and scientific training. Being able to use imagination and thought in connection with experiencing and producing works and events of one's own choice, religious, literary, musical, and so forth. Being able to use one's mind in ways protected by guarantees of freedom of expression with respect to both political and artistic speech, and freedom of religious exercise. Being able to have pleasurable experiences and to avoid nonbeneficial pain.
5. Emotions. Being able to have attachments to things and people outside ourselves; to love those who love and care for us, to grieve at their absence; in general, to love, to grieve, to experience longing, gratitude, and justified anger. Not having one's emotional development blighted by fear and anxiety. (Supporting this capability means supporting forms of human association that can be shown to be crucial in their development.)
6. Practical Reason. Being able to form a conception of the good and to engage in critical reflection about the planning of one's life. (This entails protection for the liberty of conscience and religious observance.)
7. Affiliation.
 - A. Being able to live with and toward others, to recognize and show concern for other human

beings, to engage in various forms of social interaction; to be able to imagine the situation of another. (Protecting this capability means protecting institutions that constitute and nourish such forms of affiliation, and also protecting the freedom of assembly and political speech.)

B. Having the social bases of self-respect and nonhumiliation; being able to be treated as a dignified being whose worth is equal to that of others. This entails provisions of nondiscrimination on the basis of race, sex, sexual orientation, ethnicity, caste, religion, national origin.

8. Other Species. Being able to live with concern for and in relation to animals, plants, and the world of nature.

9. Play. Being able to laugh, to play, to enjoy recreational activities.

10. Control Over One's Environment.

A. Political. Being able to participate effectively in political choices that govern one's life; having the right of political participation, protections of free speech and association.

B. Material. Being able to hold property (both land and movable goods), and having property rights on an equal basis with others; having the right to seek employment on an equal basis with others; having the freedom from unwarranted search and seizure. In work, being able to work as a human being, exercising practical reason, and entering into meaningful relationships of mutual recognition with other workers. (Nussbaum, 2003 p.42).

Although the capability approach brings an ethical and normative dimension to discussions about technology, it is possible to see the approach as having a simplistic view of technology, in which technology is seen as determining an individual's activities. So, for example, if a mobile phone is seen as automatically enabling a person to take advantage of other resources to further their valued goals in life (Sen, 2010) then it is possible to see the theory as technologically deterministic. The idea of technological determinism was described by Smith and Marx as "*the intuitively compelling idea that technological innovation is a major driving force of contemporary history, if not the primary driving force*" (1994, p.xiv).

Partly in response to these accusations of technological determinism, advocates of the capability approach have suggested that it is possible to strengthen its theoretical rigour by combining it with other frameworks. For example in their work on the

critical capability approach, Zheng and Stahl suggesting that it is lacking an appreciation of the issue of technology and distribution of power, so combine the approach with critical theory to illuminate the ‘*hegemonic functions*’ (2011, p.75) of technology. In this PhD research the capability approach – and in particular Nussbaum’s list of central capabilities – is used to evaluate the effect of the use of mobile phones on different aspects of women’s lives, but the affordances of these devices and their broader context of use are also considered. This is similar in approach to Zheng and Stahl’s (*ibid.*) notion of a ‘critical capability approach’ but is influenced by affordances and technofeminist theory rather than critical theory.

1.2.2 Instrumental, maintenance and communicative affordances

The theory of technological determinism is often connected with material views of technology. In the context of this PhD research a technologically determinist, material view would see that respondents’ access to mobile phones might be ‘determining’ their life chances and activities. In contrast to this is a semiotic or social constructivist view, which sees that the meaning of a technology (such as mobile phone) is created by the user and their social context, with the technology able to be ‘read’ like a text (Pinch, 2009).

The theory of affordances is a way to bridge these material and semiotic understandings of technology (Curinga, 2014): recognising both the actual possibilities for human action afforded by the device, and the way a device’s meaning might be constructed by the user and their societal context. The theory is concerned with understanding the possibilities for action that are afforded by an object or a technological device. The idea was originally used by Gibson (1977) as a way of understanding human and animal perceptions and actions in an environment. This

‘bridge’ that affordances can provide between the semiotic and material views of technology has seen it widely used in a variety of disciplines including HCI, communications studies and organisational studies. This study is informed by an integrative view of affordances (Fayard and Weeks, 2014). This approach acknowledges both the dispositional view of affordances – which recognises that a technology has fixed functions (such as the text input on a mobile phone) – and a relational perspective (Sun and Hart-Davidson, 2014) which suggests that affordances are constituted in the relationship between people and technology.

Three specific affordances of mobile technologies are used to structure the findings in this thesis: instrumental, maintenance and communicative affordances. This draws in part on Kaptelinin and Nardi’s mediated action perspective on affordances, in which a technology is seen as having direct, *instrumental* affordances that provide possibilities for action but that there are also indirect, auxiliary affordances also emerge in the complex “*webs of mediation*” (2012, p.972) in which devices are used.

For the purposes of this research these indirect affordances are defined as including the *maintenance* required to charge and pay for a phone. This notion of a maintenance affordance resonates with discussions of technology maintenance from authors such as Gonzales (2014) who see that the use of mobile phones by marginalised communities is characterised by unstable connectivity and faulty technology. Finally the idea of *communicative* affordances as developed by Schrock (2015) is used. Schrock created a typology of the communicative affordances of mobile phones and this research is concerned with three of these affordances: portability, availability and multimediality. Each of these theorisations of affordances contribute distinctive themes to the

conceptual framework of this research and the next section will show how these themes contributed to the analysis of the data.

Using this cross disciplinary approach, this research draws on affordances literature from HCI and mobile communications studies to understand the possibilities for action and challenges offered by the mobile phone and its context of use. But beyond this, it should be noted how feminism contributes to the overall ethos and perspective of this research. This research introduces gender into debates about digital technology and inequality and also addresses the gaps that exist in the literature about poorer women's uses of mobile phones in the UK.

The capability approach has strong links with feminist scholarship: Nussbaum suggests that it is particularly well suited to approach issues of gender justice. The capabilities-based conception of the 'good' in the capability approach is contrasted by Knobloch (2014) with the preferenced-based notion of the good, which assumes that individuals are rational, autonomous, self interested and maximising their own wellbeing. Nussbaum argues that the capability approach allows us to understand how women may display 'adaptive preferences' which do not maximise their wellbeing, but which have adjusted to their lack of status in society (2003). Feminist economists have also used the approach to examine the gender-based division of labour and unpaid work. For example Bojer (2014) discusses how women's income capabilities might be limited by their need to carry out unpaid care work.

1.2.3 New theoretical framework: affordances and capabilities

Thus this research proposes a new theoretical framework of affordances and capabilities which illuminates the relationship between a device such as a mobile

phone, an individual's life chances and their social context. From the capability approach – which gives us a model of the relationship between resources, conversion factors and capabilities – this framework takes the possibility of making normative and evaluative judgements about the social impact of technology. From cross-disciplinary theories of affordances – and in particular the integrative approach suggested by Fayard and Weeks (2014) – this framework suggests ways in which the specific affordances of a technology might impede or allow a user to take action. Combining these two theories addresses the way in which technology is potentially under-theorised in the capability approach, and provides an evaluative framework which is absent from affordance theory. This framework emerged during data analysis as a result of the use of constructivist grounded theory which is explored in greater detail in *3.7.1 Data analysis*.

Whilst the capability approach provided the initial framework for data analysis, as fieldwork and analysis continued the emergence of critical issues associated with maintenance, communications and challenges in the instrumental affordances of the device led to the adoption of affordances as a complementary framework.

The combination of these frameworks allows us to analyse the way a mobile phone might contribute in the broadest sense to a person's capabilities to live a life they value. An affordance perspective allows us to take into consideration the way the material properties of a device might impact on these capabilities: for example the restrictions of a mobile phone interface as a replacement for a computer, its need for power, credit and repair and the potentially intrusive interface design of mobile social networking platforms.

1.3 Thesis structure

The central findings chapters of the thesis are structured around the following framings:

- Thematic analysis of data from fieldwork
- Nussbaums Central Human Capabilities (Nussbaum, 2003)
- Affordances literature

Whilst the research instrument was developed with the goal of reflecting functional lists of capabilities accepted in policy and academia, other significant and unexpected themes arose during fieldwork, notably concerning the impact of the maintenance affordances of mobile phones on respondents' lives. Therefore these themes were taken into consideration in the final structure of the thesis.

Table 1 below shows the interrelationship between the chapters, the affordance explored in the chapter, the contribution of feminist theory and scholarship and other relevant literature. It also shows example themes explored in each findings chapter and the potential effect on capabilities of the particular use of the phone.

Table 1. *Thesis structure and theoretical framework*

Chapter	Affordance	Example of theme from data on use of phone	Example of relevant capability from Nussbaum's central capability list	Contribution of feminist theory	Other relevant literature
5. Instrumental Affordances: Mobile phones and Social exclusion	Instrumental	Accessing employment & health information	Being able to have good health	Gendered employment/division of labour, women's income capability (Knobloch, 2014) (Bojer, 2014)	HCI (Sun & Hart-Davidson, 2014) (Inseong et al., 2005)
6. Maintenance Affordances 1: Money, credit and contracts	Maintenance	Affordability of mobile phone contracts	Being able to hold property and having property rights on an equal basis with others	Women taking on extra phone contracts for partners – 'sexually transmitted debt' (Goode, 2010)	HCI (Kaptelinin & Nardi, 2012)
7. Maintenance Affordances 2: Battery life, broken screens and disrupted connections	Maintenance	Repairing broken phones	Being able to hold property and having property rights on an equal basis with others	Gendered engagement with technology (Thornham & McFarlane, 2011)	HCI (Rahmati & Zhong, 2009) (Rosner & Ames, 2014) Mobile communications (Gonzales et al., 2014)
8. Communicative Affordances: portability, availability, multimediality	Communicative	Use of social networking sites on phones	Being able to have attachments to things and people outside ourselves	Gendered work in maintaining relationships through mobile phones (Green and Singleton, 2013; Wajcman, 2008; Rakow, 1992, Robinson et al. 2015)	Mobile communications (Schrock, 2015)

1.3.1 Overview of chapters

1. Introduction: this chapter briefly introduces the research and outlines its motivations and key features. The political, economic and technology context of the research, the author's background and the setting of the research are also introduced.

2. Mobile phones: social exclusion, gender, affordances and capabilities: review of the literature on social exclusion in the UK, structural gendered inequality and the theoretical framework of affordances and capabilities.

3. Research design: the research approach, methodology and methods used in this study, and ethical issues that emerged in its design and implementation.

4. Research setting and respondents: the setting of the research and the lives of socially excluded young women in Brighton UK

5. Instrumental affordances: mobile phones and social exclusion: respondents use of mobile phones for instrumental purposes to address issues of social exclusion.

6. Maintenance affordances 1: money, credit and contracts: financial issues related to respondents' use of mobile phones, including the affordability of mobile phone contracts and credit and problems with mobile phone companies.

7. Maintenance affordances 2: battery life, broken screens and disrupted connections: exploration of issues related to the physical maintenance of the phone and voice and data connectivity, the relationship of these issues to women's economic status.

8. *Communicative affordances: portability, availability, multimediality*: the use of mobile phones for communicative purposes, with a focus on three particular overall affordances of the device: portability, availability and multimediality

9. *Discussion and future research*: the overall empirical and theoretical contributions of this study and the place of this study in the context of existing research on the capability approach and technology, mobile phones and social exclusion, the theory of affordances and feminist literature on technology.

1.4 Background to research

Fieldwork for this research took place against the backdrop of a deficit reduction austerity programme carried out by the UK Government in the wake of the 2008-9 recession, which was described by Hodkinson and Robbins as a “*market-driven restructuring of social welfare policy*” (2013, p.57). This programme saw cuts in social security spending to the tune of £22bn per year (Ariss *et al.*, 2015 p.2). The austerity programme had a significant effect on the lives of working class young people such as the women in this study. The programme was described by Levitas as a “*neo-liberal shock doctrine*” which “*impinge[s] directly on the poor, the young, the sick and the disabled*” (2012, p.322). Levitas noted that the programme includes increasingly stringent conditions for work-related benefits, including requirements for job-search or ‘work-related activity’ that impact on single mothers. Research looking at the gender differential of the impact of the austerity programme found that many of the individual cuts, as well as their cumulative impact, were having a disproportionate impact on women: 85 per cent of the money saved from tax and benefit changes has come from women’s pockets (Ariss *et al.*, 2015). Rafferty describes how the austerity

programme has disproportionately impacted on women's lives through cuts in employment and public spending.

These effects have been felt both through cuts in public sector jobs which disproportionately affect women due to their greater representation in the public sector and through reductions in government policies that support female employment such as childcare and welfare. (2014, p.1)

The age range of respondents in this study is 16-24 and this age range relates to the international definition of youth as accepted by the UN of 15-24 (United Nations Department of International Economic and Social Affairs, 1982) as well as UK statistical indicators such as the UK Labour Force Survey (Office for National Statistics, 2014b).

The lives and opportunities of young people have undoubtedly been affected by this political and economic climate. A 2013 survey of the overall wellbeing of over 2000 young people in the UK found that the recession was impacting on their emotional wellbeing.

Strikingly, contentment amongst young people about their emotional or mental health fell to its lowest ever level this year. Almost half of unemployed young people admit to feeling down or depressed "always" or "often". (The Princes Trust, 2013)

Looking at statistics on the labour market in the UK, Berrington et al. suggested that *"young people have been particularly affected by the economic downturn resulting from the global financial crisis of 2008"* (2014, p.1). Youth unemployment particularly affects women: since 2001 there have been on average 130,000 more young women classified as NEET per annum than young men, and young women are more likely to remain NEET for longer. The term NEET is an acronym of 'Not in Employment Education or Training' and refers to young people between the ages of

16-24 who spend a combined total of six months outside of work, education or training (Yates *et al.*, 2011). Research shows that the experience of unemployment will also have a long term effect on women's employment status: Women spending any time NEET between 16-23 will go on to have spent 36 months out of work by the age of 34 (Young Women's Trust, 2014c).

A feminist economic analysis of the impact of the recession noted a “*marked deterioration in the economic welfare of women*” (McKay *et al.*, 2013 p.120). The period of time between 2013 and 2014 when fieldwork was taking place saw an overall economic recovery in the UK, but a feminist analysis of the labour market found that not all members of society were experiencing the benefits of this growth equally.

Growth has been fuelled by part-time jobs, temporary work and self-employment, often in feminised, low-wage sectors of the economy. The gender pay gap has widened for the first time in five years and wages continue to lag behind inflation. (The Fawcett Society, 2014 p.5)

Some respondents in this study were employed in the ‘feminised, low-wage’ sectors described above, and later chapters will look at the impact of these working conditions on their lives.

The insecure working conditions and housing conditions experienced by the women in this study had an effect on their access to technology and Internet connectivity: more than half of the 30 women interviewed had no access to broadband in the place where they were living, and only 13 had their own computer. This access to technology and connectivity, and the skills required to use technology effectively is a critical concern as government and other transactional services move online. In 2012 the UK Government launched their policy of ‘digital by default’ delivery of government

services (The Cabinet Office, 2012). This policy aims to save between £1.7 and £1.8 billion a year by moving government services online. In a report on digital exclusion the Chartered Institute of Taxation voice a concern that younger people's lack of digital skills might be overlooked:

It is commonly perceived that digital exclusion is a problem mainly for older people however there is some evidence that younger people are reluctant to use government services online. (2012 p.47)

The 'digital inequality' experienced by people with limited access to broadband and home computers has been the concern of scholars for many years, some of whom have explored the links between social exclusion and what is described as 'digital exclusion' (e.g. Helsper, 2012; van Dijk, 2013; Zillien and Hargittai, 2009; DiMaggio *et al.*, 2001). Given the widespread digitisation of society – typified by developments such as digital by default government – Robinson *et al.* argue that digital inequality should be considered as a form of inequality in itself, alongside "*traditional axes of inequality*" such as race, class, and gender (2015b, p.1).

Half of respondents in this study had no home computer and could therefore be seen as 'digitally excluded'. However, 26 of the women interviewed were using a Smartphone. The UK telecom industry regulator Ofcom describes Smartphones as "*a mobile phone that offers more advanced computing ability and connectivity than a contemporary basic 'Featurephone'*" (Ofcom, 2014a, p.412). In 2013-14 Ofcom's Communications Market Report reported a rapid overall increase in the use of Smartphones, with six in ten adults claiming to own one (61%); an increase of 10% on the previous year. The same research showed that almost nine in ten (88%) of 16-24 year olds owned a Smartphone.

1.5 Research setting and author background

This research draws on my professional experience as a practitioner and researcher working on projects concerned with the use of mobile phones by marginalised communities. I spent ten years working in the not-for-profit technology sector focussing on mobile phones. This work involved researching topics such as the use of mobile phones by women for advocacy in sub-Saharan Africa (Ekine, 2010), and the digital security risks involved in human rights' defenders use of mobile phones.

This PhD research is also informed by my earlier ethnographic study of young people and their use of mobile phones, which was carried out as part of a Open University MSc course in 2011. This early study was entitled "*Digital exclusion and social capital; an ethnographic study of young unemployed people, social capital and mobile phones*".

The fieldwork for this PhD research took place in the Southern English coastal city of Brighton where I have lived for over twenty years. I have also worked in a voluntary capacity for several community initiatives with a technology focus, including as a Director of a community Internet project and co-founder of a project aimed at encouraging more women speakers at technology events. This connection with Brighton undoubtedly eased my access to the interview sites: giving me a degree of shared knowledge and connection with respondents and gatekeepers (Hammersley and Atkinson, 2007).

This chapter has briefly introduced the setting and political and economic context of this research, and the theoretical framework of affordances, capabilities and feminist thought. These theoretical tools provide a means to explore socially excluded young

women's relationships with their mobile phones: the instrumental uses they make of them, the role they play in their relationships and the financial impact of their use. Whilst Courtney claimed that there was 'nothing' she could not do on her phone, we shall see how the structural inequalities experienced by poorer young women in the UK might limit her life chances and opportunities, especially with regard to housing and employment.

2 MOBILE PHONES: SOCIAL EXCLUSION, GENDER, AFFORDANCES AND CAPABILITIES

This research is concerned with exploring the ways that socially excluded young women use their mobile phones, so this review looks at literature and data on the lives of young women, mobile phones and the theories that can be used to understand the relationship between technology use and an individual's life experiences and opportunities. Firstly literature and research on socially excluded young women in the UK is explored, using materialist, technofeminist theories to analyse gender inequality. Then the relationship between inequality and the use of technology, and relevant scholarship from the field of mobile communications studies is covered. The strength of the capability approach as a means to analyse the relationship between technology and inequality is reviewed. Finally the concept of affordances is explored in greater depth: looking at how the materiality of mobile phones – their need for maintenance, battery life and credit – impacts on socially excluded women's lives.

2.1 Defining and measuring social exclusion

The term 'social exclusion' has been broadly accepted in both policy and academia as a way of describing how certain individuals or communities might be denied access to opportunities and resources to which the broader population has access to. The term is used in this study rather than other definitions of poverty or access to financial resources. Although the term is contested, it "*is widely used and seems to be profoundly attractive to the producers of social policy discourse*" (Peace, 2001, p.17): it enables an understanding that deprivation is complex and multi-dimensional, rather than just simply related to an individual's income levels. A popularly accepted

working definition of the term was used in the establishment of the UK Labour government's social exclusion task force in 2007:

Social exclusion is a complex and multi-dimensional process. It involves the lack or denial of resources, rights, goods and services, and the inability to participate in the normal relationships and activities, available to the majority of people in a society, whether in economic, social, cultural or political arenas. It affects both the quality of life of individuals and the equity and cohesion of society as a whole. (Levitas *et al.*, 2007)

Despite the strengths of social exclusion as a term for capturing the complexity of deprivation, there are critical challenges in defining the term. For example, Levitas (2006) draws attention to the fact that it has been used to describe both characteristics of society as a whole (for example the structures and processes which might exclude individuals from social and political systems), as well as individual experiences within that society (for example the experience of a lack of power and social integration). Levitas shows how some definitions of social exclusion can be normative in their implied judgement on what activities 'matter' in society: they can also be challenging to define and operationalise empirically.

In addition to these challenges in defining the term social exclusion, there are also challenges in operationalising it. A multiplicity of indicator sets has been developed to define social exclusion, and each of these sets has their advantages and disadvantages. So, for example a single series allows for the tracking of indicators over time, since they are usually based on existing data sets – but this can also be a problem since they tend to measure “*what we can rather than what we want*” (Levitas *et al.*, 2007 p.32). Two sets of indicators are seen by Levitas as the most important for measuring social exclusion. At a European level the Laeken indicators are an agreed set of indicators for measuring progress in tackling poverty and social exclusion across the EU (for

example Eurostat, (2012)). These indicators focus on economic deprivation and educational attainment. In the UK the Monitoring Poverty and Social Exclusion series (Aldridge *et al.*, 2013) are produced by the New Policy Institute and the Joseph Rowntree Foundation and include economic indicators and indicators of educational attainment, but also indicators related to child welfare, isolation and support, and access to transport and housing.

As well as these differing ideas about how to ‘measure’ social exclusion, other issues arise when it comes to applying these indicators to people such as the young women who are the subject of this research. Levitas (2007) argues that they are conceptually inadequate, since they confuse the causes, symptoms and outcomes of multiple deprivation and they also fail to capture effectively the complexity of young people’s lives in the transition from school.

However for the purposes of this research it is useful to identify potential domains of social exclusion as used in these indicators. In the Monitoring Poverty and Social Exclusion reports the following domains are used:

- Low income
- Work
- Education
- Benefits
- Housing
- Health

Whilst the Laeken Indicators cover the following domains:

- Low income

- Work
- Education
- Health

These indicators were used in the research design to inform the choice of baseline data about respondents that was collected (see 3.4 *Methods*) and also to inform the thematic analysis of the data in this study. So, in Chapter 5. *Instrumental affordances: mobile phones and social exclusion*, the findings are structured around the impact of the use of mobile phones on employability, education, housing and health. In this chapter the term ‘employability’ is used rather than simply ‘work’ as it captures both the skills and capabilities required for work.

2.1.1 Social exclusion and the capability approach

Whilst social exclusion as a term is a challenge to both measure and define, by going beyond simple measures of poverty it is able to capture something of the complex and interlinked challenges the young women interviewed for this study might be facing in their lives. The concept of social exclusion has also been linked with the capability approach. Peruzzi (2014) argues that the capability approach theorizes poverty as multidimensional, in a way that closely relates to the idea of social exclusion. Writing about social exclusion in 2000, Sen argued that it can also lead to other deprivations, thereby limiting opportunities which are available to people. He sees it as “*constitutively a part of capability deprivation as well as instrumentally a cause of diverse capability failures*” (2000, p.5). Peruzzi (2014) found evidence that this relationship between different aspects of deprivation exists in the UK. She found a relationship between five spheres of individual well being – health, political

engagement, resources, services, and production – in longitudinal data from a dataset of people born in 1970 in the UK (the 1970 British Cohort Study (BCS70)).

2.2 Social exclusion and gender inequality

EU statistics based on the Laeken Indicators found that, in 2012, 24.1% of the UK population was at risk of poverty or social exclusion (Eurostat, 2012) but there is a gender differential in these statistics: the figure for men is 23.4% and for women is 24.8% of the population. This shows that women in the UK were, at the time of this research, at greater risk of social exclusion than young men. Further analysis of the economic circumstances facing women in the UK shows that poorer women are facing challenges that are at odds with a broader trend towards gender equality in the country. The Equality and Human Rights Commission – the public body tasked with promoting equality in the UK – suggested in 2011 that a degree of gender equality has been achieved institutionally through legal frameworks that prohibit discrimination and require public bodies to promote equality. The Commission sees this demonstrated through transformations in public opinion that “...*suggest that we are more tolerant of difference, and less tolerant of discrimination*” (Equality and Human Rights Commission, 2011 p.12).

But despite these shifts in public opinion, women continue to face discrimination in the labour market in UK. The persistence of this structural discrimination is a motivation for the materialist feminist theoretical approaches used in this study, which is discussed in section 2.4 *Young women, social and digital exclusion* below. According to a 2012 report on women and work “*women faced lower pay and were more likely to have experienced unfair treatment than men*” (Trades Union Congress,

2012). A gender-based economic analysis of trends in labour conditions argued that “*the increased use of casual, part-time working arrangements [which] have had the effect of sustaining existing gender-based inequalities or even creating new ones*” (McKay *et al.*, 2013 p.116). Women constitute almost two-thirds (62%) of those on low pay (The Fawcett Society, 2013). The Low Pay Commission’s report from March 2012 found that part- time jobs, temporary jobs and jobs in certain industries and occupations, such as cleaning, hospitality and hair dressing, are more likely to be minimum wage jobs done by women.

These economic challenges are particularly challenging for women such as the respondents in this research who are aged 16-24 and in the life stage of transition from school to work. This transition can present particular challenges for young people from poorer backgrounds. Yates *et al.* identified the challenges faced by young people from these backgrounds (low-SES or low socio-economic status) in the transition from school to work:

...this low-SES group of young people is the least well-equipped to make effective post-16 plans or to adapt to set-backs in their trajectories, and to be confronted with the least palatable alternatives to the secure and well-paid jobs to which they aspire. (2011, p.531)

Looking at the changing nature of this transition period in young people lives, Berrington (2014) suggests that changes in the UK economy have led to increases both in the level of NEET young people, and in the economic uncertainty faced by those who are in work. Berrington argues that young people and mothers with childcare responsibilities are particularly at risk of experiencing what she describes as a “*low pay - no pay cycle*” of economic and employment uncertainty. There is also gender inequality in this transition stage as women are more likely to be without employment, or in education or training than their male counterparts. Government figures from

2013 in Table 2. below show that more young women than men were categorised as NEET during the time that fieldwork was taking place. Research by the Young Women's Trust shows that this disproportionate level of female unemployment has been the case for ten years (Young Women's Trust, 2014b).

Table 2. *People aged from 16 to 24 Not in Education, Employment or Training January-March 2013*

Total	Men	Women
1,092,870	494,426 (45%)	598,444 (55%)

Source: Labour Force Survey/Office for National Statistics 2013

Analysis of the British Household Panel Survey (BHPS), of 1,400 individuals over 5 years found that gender is a strong predictor of an unsuccessful transition into the labour market (ACEVO, 2012). Yates et al. (2011) used data from the British Youth Cohort Study (BCS70) to conduct longitudinal analysis of career aspirations and employment of a cohort of young people as well as referring to European analysis carried out by Ianelli and Smyth (2008) on the European Union Labour Force Survey 2000. They found that “*occupational segregation and employment inequalities by gender remain. Across Europe, young women are less likely to access paid employment than men*” (Yates et al. 2011, p.516).

Escott used statistical analysis, stakeholder interviews and focus groups to explore the lives of young women living in disadvantaged communities. Her findings suggest that caring responsibilities and ill health are barriers to young women in poorer communities finding work, and that the type of employment these women have access to might perpetuate they poverty they experience.

The jobs available to the employable young women in this study were often poor quality and low status; the types of jobs also known to contribute to the poverty trap many disadvantaged households experience. (Escott, 2012, p.425)

Research by the Young Women's Trust also suggests that women are being influenced to move into 'gendered' professions such as childcare. Female NEETs are three times more likely than their male equivalents to have been told to think about becoming care workers, nannies, nurses or hairdressers. Meanwhile men are six times more likely to be told to think about becoming IT technicians, construction workers or electricians and plumbers (2014b). In chapter 4, *Research setting and respondents* the employment status of women in Brighton, and the impact of 'zero hours' employment contracts is explored in greater depth.

2.3 The impact of social exclusion

The young women in this study are living in a society that has made transformations overall towards gender equality in the last thirty years. A report from 2013 by the Institute of Public Policy Research (IPPR) on gender equality in the UK, found overall progress in women's aspirations and opportunities: "*Female employment soared in the 1980s, girls have been outperforming boys at school and at university since the mid-1990s*" (Lanning *et al.* 2013, p.2).

But this same IPPR report warned that all women did not experience these benefits equally.

Improvements in the difference between the 'average man' and the 'average woman' since the 1980s have taken place against a backdrop of stagnant social mobility, rising economic inequality, and a dramatic shift in the nature of work available... The narrow focus on women at the top and on work as purely emancipatory ignores the polarisation of women's experiences of work. (ibid. p.2)

On a broader scale these changes in working conditions are linked to globalisation: "*a process of integrating countries into the world market by dismantling the mechanisms,*

from tariff policy to capital flows, that gave countries control over international investment” (Eisenstein, 2010, p.414). Eisenstein describes the ways in which these global shifts have impacted on employment patterns.

With the decline of unions, a ‘flexible’ workforce of part-time, contract employees has emerged, producing an economy where some one-quarter of workers are earning poverty wages. All of these changes make up the process of globalisation. (ibid.)

This section looks at the impact these economic aspects of social exclusion have on women’s lives and opportunities throughout their life course. There is evidence that experiencing unemployment or low wages at between the ages of 16 and 24 – the age of the women interviewed for this PhD research – can lead to permanent negative impacts on their life chances. Research undertaken for a 2012 Commission on Youth Unemployment, analysed Government statistics from the Work and Pensions Longitudinal Survey (WPLS) – February 2011 release – and the Labour Force Survey (LFS) January to March 2011 data. This Commission on Youth Unemployment study showed the long-term impact on the employment prospects for people who are unemployed:

An individual unemployed for a year between the ages of 16 and 24 is likely to spend just under 9% less time in work between the ages of 26 and 29 than they would have done otherwise... if young people experience unemployment between the ages of 16 and 24, they will on average spend longer out of work, in single or multiple spells of unemployment”.

(ACEVO, 2012)

The same research found that experiencing unemployment causes a reduction in likely salary in later life for young people, known as ‘wage scarring’:

For men unemployed at a young age, the average wage penalty by the age of 30/34 will be just under 16%, with the equivalent figure for women being just over 17%” (ibid. p.14).

Using data provided by the New Earnings Survey Panel Dataset, which tracks the earnings of individuals since 1975, Hurrell (2013) found that women are less likely to progress out of low pay – even after characteristics such as occupation and industry are controlled for. This finding is echoed by Sissons: “*In many cases low-wage work is not acting as an ‘escalator’ into employment which offers better wages and prospects, but is instead a dead-end*” (2011, p.5). He describes the polarisation of jobs between high-skill, high-wage professional and managerial occupations and lower wage service occupations, and cites data from the British Household Panel Survey (BHPS) to show that women and those with no qualifications were significantly more likely to remain stuck at the bottom of the earnings distribution. Sissons’ (*ibid.*) analysis of the British Household Panel Survey found that 79 per cent of ‘immobile’ low-earners who remained in the bottom pay quintile over a period of eight years were women. This is in contrast to a growth found by Sissons in women’s role in professional, managerial, associate professional and technical occupations; described by Wolf (2013) as the ‘new female elite’ who are the best educated and most successful women.

Some authors suggest that experience of being economically inactive can have a greater psychological impact on women’s lives than on men’s lives. Bynner and Parsons (2002) conducted a longitudinal study of a sample of the 1970 British Birth Cohort Study. This longitudinal aspect of the data enabled the authors to track the longer-term impact of being unemployed on young people and in particular those defined as NEET. Bynner and Parsons argue that there is a difference in the impact of this status for young men and women: that whilst for young men there are impacts on future employment and social exclusion.

For young women the NEET experience appears to impact on other facets of identity as well. The association of NEET with negative psychological states, including (self-reported) lack of a sense of control over life and problems and dissatisfaction with life, points perhaps to more fundamental damage occurring. (Bynner and Parsons, 2002 p.13)

Whilst this snapshot of economic inequality in women's lives does not capture other aspects of social exclusion such as skills and health, it has been argued that labour market issues, such as persistent low pay are one of the three "*major contextual factors*" driving social exclusion (Bradshaw *et al.*, 2004 p.9). The research cited above also demonstrates the importance of women's life experiences in the transition from school to work between the ages of 16-24 in determining their future life chances.

2.4 Theoretical tools to understand gender inequality

There are many different ways to theorize gender and how gender relates to other aspects of women's lives; "*There are many women's movements and many feminisms speaking many political languages, all too often at odds with each other*" (Stacey 2006, p.66). This section briefly explores three theoretical approaches associated with feminism which inform the design of this research and the theoretical framework used:

- Materialist feminist ideas;
- Technofeminism, which illuminates how the social construction of gender identity might impact on women's use of technology;
- The capability approach, which it is suggested is particularly well suited to address issues of gender equality.

From the literature and data cited above it is possible to argue that certain women in the UK are experiencing inequality that is associated with their gender and in recent years Benn (2013) called for a re-energising of materialist feminist thought to take

account of the widening structural inequality *between* different groups of women in society (Wolf, 2013) as well as between women and men. As mentioned above, the persistence of this structural inequality, which is experienced by some young women, and the long-term impact of experiencing this inequality at a young age, informs the materialist feminist perspective that underpins this PhD research. Since the inequalities described above that young unemployed women are experiencing relate to aspects of society which channel women and women into different paths in life, Alsop and Fitzsimons suggest that this would give a theoretical fit with materialist theories, since they providing a structural account of the “*systems of power and control which give rise to sets of social relations*” (Alsop *et al.*, 2002, p.65). This approach understands gender as a social structure (Risman, 2004), seeing differences between men and women as social rather than natural categories (Jackson and Scott, 2002). In Alsop and Fitzsimons (2002) analysis of feminist theory, until the 1970s the heterogeneity of women’s experiences – the differences in the lives and opportunities of poor young women and rich women living cheek by jowl in the same city – were implicitly ignored by the ‘false universalism’ of ‘cultural’ feminist thought which “*begins with the assumption that men and women are basically different*” (Hennessy and Ingraham, 1997, p.6). It is argued by Delphy that the appearance of the term “*gender*” in the early 1970s was key:

The idea that both genders are independent of both sexes has progressed, and the aspects of ‘sex roles’ and sexual situations which are recognised to be socially constructed rather than biologically determined has grown. (Delphy, 1993, p.3)

In the late 1970s ‘materialist feminism’ emerged in opposition to this feminism of sexual difference. It drew on both radical feminist and Marxist thought and had as one of its central concerns the “*sexual division of labour and the implications of this for*

power relations between men and women” (Wolpe and Kuhn, 1978 p.7). It should be emphasised that this materialist, structural account does not reduce women to a single category – ignoring other axes of domination such as race or sexuality. Instead, Jackson argues, this approach allows us to interrogate everyday social practices.

Adopting a materialist stance does not preclude awareness of differences among women: on the contrary, a full understanding of those differences requires that we pay attention to material social inequalities and everyday social practices. (Jackson, 2001 p.284)

Thus a materialist stance allows for an intersectional feminist approach (Crenshaw, 1991), which acknowledges multiple dimensions of inequality. Lykke describes this approach as a means to analyze how sociological categorisations such as gender, race, class and sexuality interact and *“in doing so produce different kinds of societal inequalities and unjust social relations”* (1991, p.50).

Wajcman (2010) shows how through the 1980s this materialist feminist idea of ‘gender’ as separate from a biological idea of ‘sex’ enabled feminist thinkers to explore the gendered nature of technology and technological expertise. She builds on ideas from social construction of technology theory – which is underpinned by a notion that technology, society and material objects are in a continuous state of movement and mutual interaction - *“technological artefacts, in both their form and meaning, are socially shaped”* (Hutchby, 2001). Wajcman defines a ‘technofeminist’ framework, which brings a feminist framing to social constructivist thought: analysing technology as both a source and a consequence of gender relations.

The materiality of technology affords or inhibits the doing of particular gender power relations. Women’s identities, needs and priorities are configured together with digital technologies. (Wajcman, 2010 p.150)

More recently Arvidsson and Foka (2015) have called for an invigoration of feminist thought to recognise the “*profound societal effects*” of the Internet. They argue for the term “digital gender” as part of a process of acknowledging the way the “*Internet takes part in the materialization of race, gender, and class*”. They define the term as follows:

The interdependent origination, or shared becoming, of new social practices and gender roles around new uses of digital technology.

Nussbaum suggests that the capability approach is particularly well suited to approach issues of gender justice because it illuminates how women display “*adaptive preferences*’ which have adjusted to their lack of status in society: [the capability approach]... *is superior to other approaches to social justice in the Western tradition when we confront it with problems of sex equality*” (2003, p.36). She suggests that the capability approach is closely related to human rights but that, by recognising the significance of the private sphere, it has space to recognise the particular oppression suffered by women inside the home such as domestic violence.

[The capability approach] is well placed to foreground and address inequalities that women suffer inside the family: inequalities in resources and opportunities, educational deprivations, the failure of work to be recognized as work, insults to bodily integrity. (ibid. p.39)

So what do these three strands in feminist thought bring to this study? Firstly, it should be acknowledged that this is a necessarily extremely limited and partial account of feminist scholarship. Materialist feminism provides a structural account of some of the inequalities experienced by some respondents, including their employment in low-income sectors such as childcare and catering. These employment issues are discussed in greater depth in section 5.2 *Mobile phones and employability* where the employment opportunities that were available to respondents in this study are

explored. ‘Technofeminist’ theory is influential in suggesting ways to understand the intersection of gender identity and women’s use of mobile phones. For example the role of mobile phones in women’s experiences of gender-based harassment, which is explored in section 8.4.6 *Technology-facilitated sexual violence and harassment*. These approaches also allow for a critical appraisal of women’s relationship with the mobile phone as a consumer object, and consumerism’s “*critical place in the formation of the categories of youthful femininity*” (McRobbie, 2008, p.532) in 7.2 *Broken screens and fragile devices*. Finally, the capability approach allows for an understanding of inequalities inside the family and adaptive preferences that Nussbaum describes above. In her work on the capability approach Kleine links these choices to “*social norms and discourses as well as psychological resources like self confidence and the ability to envision*” (Kleine, 2013, p.33)

2.5 Social and digital exclusion

Whilst theories of social exclusion look at the relationship between areas of inequality in people’s lives, the term ‘digital exclusion’ or the ‘digital divide’ looks at the relationship between social inequality and access to digital tools and connections. Whilst the term ‘digital divide’ has become widely adopted to discuss these divisions in access and use of technology within countries such as the UK and has become significant in policy terms in the UK and Europe:

One of the major government policy challenges of the past decade has been ensuring that all adults have access to – and make good use of – the Internet. Indeed, most industrialized nations have now developed comprehensive policy agendas seeking to support and encourage Internet use across the general population, often with the aim of establishing ‘universal access. (White and Selwyn, 2011 p.2)

At the time of fieldwork, 83% of the UK population had access to the Internet (Office for National Statistics, 2013), but a report from 2013 found that, despite progress in addressing the digital divide, *“one in five remain without access, making the digital divide a continuing issue even at the basic level of access”* (Dutton *et al.*, 2013 p.54). In 2014, a statement from the UK Government made it clear that the Digital Exclusion Strategy aims to go beyond merely getting more people to use digital technologies: instead it aims to *“make digital inclusion part of wider government policy, programmes and digital services”*. This is undoubtedly linked to the policy of Digital by Default delivery of government services (The Cabinet Office, 2012). The Digital Exclusion Strategy links digital and social exclusion: *“Helping more people to go online can also help tackle wider social issues, support economic growth and close equality gaps”*(Cabinet Office *et al.*, 2014).

The link between social and digital exclusion has been noted in UK (Helsper, 2008) and European policy (European Commission, 2013). For example, Bynner *et al.* link social exclusion to an absence of digital skills and access.

Recent studies have consistently shown that individuals who have ‘digital’ access have had more education and higher status occupations. Absence of those attributes, including digital competence increases the chances of social exclusion. (Bynner *et al.*, 2010, p.4)

This link between socio-economic status and digital skills and access was also confirmed by a BBC survey (BBC Marketing and Audiences, 2013), which looked at the digital capabilities of people in the UK. It found that 21% of respondents (equivalent to 11m people) did not have what is described as ‘basic online skills’ and that, within this group, the largest proportion (44%) were from the DE socioeconomic group who are typically in semi-skilled and unskilled manual occupations, or unemployed.

Studies aiming to theorise the link between socio-economic status and digital skills and access have used theories such as the knowledge of information gap hypothesis (Bonfadelli, 2002), or diffusion of innovations and technology acceptance (Wareham *et al.* 2004). However Helsper (2012) and van Dijk (2013) both argue this existing work relies on methodological individualism, which produces descriptions of the relationship between digital and social exclusion, rather than attempting to theorise these relationships. In response to what she sees as this absence of theorising, Helsper proposes a corresponding fields model in which four areas – economic, social, cultural and personal – of digital inclusion and social inclusion are linked. In Helsper’s model an individual who is excluded from a particular ‘field’, such as cultural life, will experience exclusion in the same field online, but this relationship between two fields can be mediated by certain factors. Helsper suggests two sets of impact factors that can mediate this relationship between the two fields: social impact mediators (individuals’ access, skills and attitudes), and digital impact mediators (the relevance, quality, ownership, sustainability elements of different types of digital engagement).

A report from the ‘*Measuring Digital Skills, From Digital Skills to Tangible Outcomes*’ project (van Deursen *et al.*, 2014) took the corresponding fields model as a basis for the development of a standardised instrument to measure digital skills. The findings of this report are informed by an extensive review of the literature and results from a pilot survey on digital skills and outcomes in the UK and the Netherlands. It is an important attempt to measure how different digital skills might impact on different aspects of an individual’s life, but it has some limitations in its coverage of mobile devices. Five mobile internet skills are covered in the survey:

Operating mobile Internet

I know how to connect to a WIFI network

I know how to download apps to my mobile device

I know how to turn my mobile phone off

I know how to keep track of the costs of mobile app use

I know how to install apps on a mobile device. (ibid. p.12)

Whilst these are important skills, they lack some granularity of detail which might yield more significant data, especially with regard to the maintenance affordances of mobile devices.

Helsper's work contributes to literature that looks at how to differentiate between simply having access to technology and making effective use of technology, for example by looking at 'gradations' (Livingstone and Helsper, 2007) in Internet access and the 'second-level digital divide' (Hargittai, 2012). Zillien and Hargittai (2009) carried out a study that looked at people's Internet use, rather than simply whether they had access. They concluded that new forms of social inequality might be emerging, in which people's life chances depend on what they are doing online. Zillien and Hargittai analysed data from a survey of 10,000 German Internet users and discovered links between social status of users and what they describe as 'capital-enhancing' uses of the Internet.

A user's social status is significantly related to various types of capital-enhancing uses of the Internet, suggesting that those already in more privileged positions are reaping the benefits of their time spent online more than users from lower socioeconomic backgrounds. (Zillien and Hargittai, 2009 p.287)

van Dijk contributes to these debates on the differentiation between access and use with what he describes as an "*appropriation theory of the diffusion, acceptance and adoption of new technologies*" (van Dijk, 2013, p.32). van Dijk uses the idea of personal and positional categorical inequalities (such as race, class, gender and employment status) as being a determinant of an individual's access to resources and

thus of access to information and communication technologies. van Dijk suggests this differentiation in access leads to unequal participation in society. This idea of categorical inequalities certainly relates to the issues of structural inequality experienced by women in this study. van Dijk then goes on to theorise the phases of appropriation of technology: distinguishing between motivation, physical access, skills and usage. This is a useful distinction for this study: for example as we shall see in 8.2 *Young women and social media*, some respondents had access to powerful Smartphones but were mainly using them to access Facebook. Yet van Dijk claims that there is limited research on the impact of the effects of these differentials: “*Strangely enough, research of the social effects of all these inequalities of access is very scarce*” (ibid. 45). Arguably, this study is addressing exactly this issue of the social effects of these inequalities of access.

Bourdieu’s (1986) concept of Capital and its uneven distribution has been used to to understand the way that socially excluded members of society engage with technology (e.g. Clayton and Macdonald 2013; North *et al.*, 2008; Robinson, 2009). Halford and Savage (2010) also consider Bourdieu’s work useful for exploring the links between social and digital inequality, but they also draw on actor network theory (Latour, 2005) and techno-feminist theory (see 2.4 *Theoretical tools to understand gender inequality*). In contrast to van Dijk, Halford and Savage take a more fluid view of inequality and social relationships: to “*avoid positing the existence of reified social groups which are held separate from technological forces*” (2010, p.937). With these theoretical tools Halford and Savage suggest that people and technology have an identity that is ‘co-produced’, and that technology has the potential to ‘crystallise’ social relations. Of all the works cited it is perhaps Halford and Savage’s that is the

most relevant for this research. Their framing of the relationship between social relations and digital inequality gives us a space to talk about the affordances of devices – what they allow and permit – and also foregrounds the way technology can materialise gender relations.

2.5.1 Generational divides

There has been a widespread assumption that young people are not at risk of digital exclusion, since the literature on young people's user of the Internet has been dominated by the idea that young people are 'digital natives' (Prensky, 2001; Palfrey and Gasser, 2008) who are comfortable using digital tools simply by virtue of having grown up with them. However Holmes argues that this view is based on speculation rather than empirical studies of young people: “...*comparatively little progress has been made in theoretically characterising young people's use of the Internet based on empirical data*” (2011, p.1105). boyd suggests that the term digital native has political roots in what she describes as “*American techno-idealism*” and that it implicitly does not acknowledge the variations in digital skills amongst young people.

The notion of the digital native, whether constructed positively or negatively, has serious unintended consequences. Not only is it fraught, but it obscures the uneven distribution of technological skills and media literacy across the youth population, presenting an inaccurate portrait of young people as uniformly prepared for the digital era. (boyd, 2014a p.180)

Eynon and Geniets (2012) carried out one of the few empirical studies to date in the UK on young people who were making limited use of the Internet. They analysed data from the Oxford Internet Survey (Dutton and Blank, 2013) and found that 10% of young people aged 17-23 define themselves as lapsed Internet users: challenged not only by lack of access to the technology by also by a lack of cognitive skills and socio-cultural resources which might enable effective use of online resources. This

finding was also confirmed by the work of North, Snyder *et al.* who found that “*some young people ignored or resisted acquiring cultural capital through their technology practices*” (2008 p.908) and that this was strongly linked with markers of class.

Works such as the two cited above on the use of technology by socially excluded young people are unusual, since there is a notable lack of data and academic research on this topic. Given the significance of labour market issues in determining social exclusion, and the importance of technology skills in accessing employment (Bynner *et al.*, 2010) it might be expected that there would be more attention paid to the use of technology by young people defined as ‘NEETs’, yet Passey *et al.* (2008) found that the research literature on this subject is slim. Such research as there is suggests that use of technology by young people defined as ‘NEET’ is often limited to social networking, downloading music and playing games (Helsper, 2008). The dominance of social networking in respondents’ use of their mobile phones is discussed in 8.2 *Young women and social media.*

Other research suggests that these barriers may be a serious impediment for the young women who are the subject of this research, for example by restricting their access to work that requires keyboard skills. Bynner and Reder analysed longitudinal data, collected from a subsample of the 1970 British Birth Cohort Study surveyed at age 21, to model the relationship of NEET status to earlier educational achievement and circumstances and found that for young women who are seeking employment in offices a lack of ‘digital competence’ means that “*modern office work is largely inaccessible or heavily restricted*” (Bynner *et al.*, 2010, p.10) and that “*those without ICT skills – on the ‘wrong side’ of the digital divide – are likely to have their*

opportunities for getting work curtailed; they are also likely to find their opportunities for progress in their job impeded” (ibid, p.44).

A large-scale UK survey of more than 10,000 adults revealed that 18-24 year olds were less likely than other adult age groups to use the Internet for information seeking about advice for problems with a legal dimension, and also showed that this use of the Internet appeared to be related to academic achievement with less well educated individuals being less likely to use the Internet for this purpose. The authors suggest that this indicates that low income and poorly educated young people might not be able to make effective use of the internet for instrumental uses such as looking for advice.

Internet services may not be most appropriate or effective for young people not in education, employment or training (NEETs). Where issues of poor access, lower age, and incomplete education coincide, successful use of the Internet for advice-seeking activities will be fraught with impediment. (Denvir *et al.*, 2011 p.97)

This issue has taken on greater urgency since it has been suggested that the lives of these young people might be negatively impacted by the UK Government's policy of ‘digital by default’ delivery of government services: “*which could reinforce the social exclusion of a sizeable segment of the population*” (Low Incomes Tax Reform Group of The Chartered Institute of Taxation, 2012, p.7).

The authors of the Oxford Internet Report from 2013 concur with the idea that the ‘digital native’ stereotype is not a useful one: they suggest that generational divisions are not as relevant as ‘cultures’ of Internet use and instead see a new divide arising between those who belong to a culture of ‘next generation’ users of technology and those are not:

Next generation users tend to be more effective users of the Internet for leisure activities and also for job and work information. This suggests that the benefits of the Internet will flow disproportionately to them. (Dutton *et al.*, 2013 p.11)

These ‘next generation’ users are defined as people who both (1) use at least two Internet applications on their mobile phone and (2) own at least two of the following: a tablet, a reader, or three or more computers. (Dutton *et al.*, 2013, p.10). The role of mobile phones is explored in the next section.

2.6 Mobile phones and young women

The lack of literature and data on the relationship between social exclusion and the use of mobile phones is a key gap in the literature and data that is addressed by this study. This section looks at the data on the use of mobile phones in the UK, ‘mobile communications studies’ literature and work on women’s use of mobile phones in particular.

26 out of 30 respondents in this study used a Smartphone, and the remaining four used basic Featurephones that are not able to connect to the Internet. The telecoms regulator Ofcom defines a Smartphone as “*a mobile phone that offers more advanced computing ability and connectivity than a contemporary basic 'Featurephone'*” (Ofcom, 2014a). Smartphones have multiple functionalities: rich media capture and playback, social media, apps with a specific purpose such as transport information or e-commerce, as well as a range of text and voice communication functions. Tracing the emergence of the Smartphone in his study on mobile interactions Kjeldskov (2013) identifies seven phases in the evolution of the device, leading to the typical type of Smartphone used by women in this study. These phases each produced new devices

with particular affordances and designs. For example, the connectivity phase saw the introduction of the digital GSM phone system in 1991.

1. Portability
2. Miniaturisation
3. Connectivity
4. Convergence
5. Divergence
6. Apps
7. Digital ecosystems

Kjeldskov cites the launch of the iPhone in 2007 as being particularly important: a “significant rethinking of the design of mobile interactions”. The fact that the web browser on an iPhone “*made it possible to access web content on a mobile device with a positive user experience*” (Kjeldskov, 2013, p.6) is significant in the context of this research and debates on ‘digital exclusion’.

The dominance of mobile phones in the lives of young people will be discussed below, but it is necessary here to draw attention to the potential role of these devices in digital exclusion in the lives of young people – and the possibility that these devices might replace personal computers in their lives. The term ‘leapfrogging’ has been used in the literature that looks at the role of ICT and mobile phones in development (ICT4D and M4D) to describe the way that new users of the Internet are going online on mobile phones rather than via personal computers. This leapfrogging of PC-based Internet access has been hailed in many quarters as an important means of rapidly and inexpensively reducing the gap in Internet access between developed and developing nations, thereby reducing the need for policy interventions to address this persistent

digital divide (Napoli and Obar, 2013 p.1). However there is limited data available on this ‘leapfrogging’ outside the M4D and ICT4D sectors, which focus on regions such as Sub-Saharan Africa. Research from the Pew Research studies in the USA suggests that poorer and less well-educated people are more likely to be using only their mobile phones to go online (Duggan and Smith, 2013). Despite the dominance of mobile phones in the lives of young women which emerged in this research, there has been little research which looks at young women's use of mobile phones and how they may be used to access the Internet: “*Little is known about mobile phone use among youth or whether a mobile phone digital divide exists*” (Cotten *et al.*, 2009, p.1164). Whilst some research suggests that mobile phones might be a means for marginalised communities to gain access to social, cultural and economic resources (Helsper, 2008) – this is countered by other research on young people and mobile phones: “*The notion of the mobile as a solution to digital exclusion seems to us not sufficient and based on inaccurate assumptions about this group.*” (Eynon and Geniets, 2012, p.27).

Whilst mobile phones might not be a ‘solution’ to digital exclusion, the figures from Ofcom shown in Table 3 below demonstrate that accessing the Internet on a mobile phone was extremely popular amongst young people at the time of fieldwork.

Table 3. *Mobile Internet Use in the UK*

Age	Mobile Internet use 2009 (percentage of respondents)	Mobile Internet use 2014 (percentage of respondents)
16-24	38	75
25-34	34	74
35-54	20	56
55-64	5	27
65+	2	5

Ofcom Communications Market Report 2014 (Ofcom, 2014a)

Ofcom data also shows the importance of mobile phones overall as a communication device: both in poorer households and for young people. Tables 4 and 5 below show

how over a quarter of young people, and also a quarter of people in DE socio economic groups lived in ‘mobile only’ households in 2014 (these are households where there is no landline phone). Of the 30 respondents in this study, only five had access to a landline (16%).

Table 4. Mobile only households by age

Age	Mobile only households 2014 (percentage of respondents over 16)
16-24	26
25-34	28
35-54	14
55-64	9
65-74	5
75	3

Ofcom Communications Market Report 2014 (Ofcom, 2014a)

Table 5. Mobile only households by socio-economic group

Age	Mobile only households 2014 (percentage of respondents over 16)
DE	27
C2	16
ABC1	10
All households	16

The socio-economic groupings used by Ofcom follow the Market Research Society occupational groupings. The DE group includes semi-skilled and unskilled manual workers, apprentices, casual workers and the unemployed. The majority of respondents in this PhD research would be included in this occupational grouping.

The Ofcom Technology Tracker surveys also show a socio-economic differentiation in how people use their phones (Ofcom, 2013a). Thus it can be seen from the shaded boxes in the table below that people from DE social class are almost 20% less likely to be accessing the Internet on their mobile phone and almost 25% less likely to be sending and receiving emails.

Table 6. Phone use other than voice calls as a percentage of all phone users 2013

Use of phone	Social class			
	AB	C1	C2	DE
Send/ receive text messages (SMS)	91%	89%	89%	88%
Use your phone as a camera	67%	67%	57%	55%
Accessing the Internet	56%	54%	44%	37%
Send/ receive messages with pictures/ images	46%	48%	39%	30%
Send/ receive emails (not SMS)	49%	42%	31%	25%
Visiting social networking sites e.g. Facebook, Twitter, LinkedIn	39%	41%	32%	33%
Play games	33%	36%	34%	32%

(Ofcom, 2013b)

However the Ofcom data is not differentiated by both age and socio-economic group: so whilst it shows that Smartphones are widely used by young people, it does not show how young women who are unemployed *and* on low-incomes use their Smartphones.

2.6.1 Mobile communications studies

The field of mobile communications studies looks at the impact of mobile phones on behaviour and social relations, and has developed in the last decade against the backdrop of a rapidly changing technological environment, with significant works such as those by Castells *et al.* on the “mobile network society” (2007). Yet this rapid development could be the reason that the field remains ill defined: Campbell argues that “*little attention has been given to defining – and justifying – the field itself.*” (2013, p.9). In a 2015 overview of significant works in mobile communications studies Goggin *et al.* describe the field as a “*dynamic moving target*” in a reflection of the rapid evolution of mobile technology itself, but the authors recognise the continuing importance of research which looks at the relationship between mobile

technology and society as an “*an axial and enduring theme of mobile technology research*” (Goggin *et al.*, 2015).

Yet the field of mobile communications studies has both methodological and theoretical limitations. The field has been limited in its scope by the dominance by studies of college students (or ‘convenience samples’). Peterson (2001) identified limitations with the use of college students as respondents in a meta study across the social sciences. He found that responses from college students tended to be more homogenous than non-students, and there were also differences in effect size. Wallis found that mobile communications studies focussed on the use of devices by “*educated, comparatively well-off, urban teenagers and college students*” rather than “*...economically or socially marginalised young people*” (2012, p.25). In the field of Human Computer Interaction (HCI) some work has been done which looks at the influence of social class on mobile phone use (Rahmati *et al.*, 2012) but Rahmati’s study also used college students as respondents. In an analysis of original research articles about mobile phones published in five journals, Taipale and Fortunati found a similar trend of methodological limitations in the use of college students as research objects in mobile communications studies research. As this PhD research aims to look at the relationship between mobile phone use, and social and economic marginalisation, the use of a sample of college students would not have been appropriate.

On a theoretical level Taipale and Fortunati critique the field of mobile communications studies as dominated by neopositivist approaches which maintain “*the conceptualization of reality as an object that researchers can and have to measure in order to understand the social phenomena and processes connected to*

their research topic” (2013, p.11). This ‘neopositivism’ relates to Taipale and Fortunati’s criticism that studies in the field of mobile communication largely fail to take an evaluative, critical approach to the role of technology in society and, more broadly, lack serious efforts at building and developing theory. Overall Taipale and Fortunati find a lack in mobile communications studies of what they describe as a “*grand sociological theory*” which “*bring sociological discourse exactly to the opposite side of what it should be: the critical conscience of society*” (2013, p.11). In using the normative framework of the capability approach and critical approaches from feminist theory this PhD study aims to contribute to the growth of a theoretical perspective in mobile communications studies.

Taipale and Fortunati’s (2013) discussion of trends in mobile communications research focussed on work that had been published in just five communications journals, and therefore overlooked significant works on mobile phones that have emerged from the field of anthropology. These include Horst and Miller’s (2006) work on the role of the mobile phone in everyday life in Jamaica, and Madianou and Miller’s (2011) work on the role mobile phones play in maintaining migrant worker’s family relationships. Other anthropological work, such as Archambault's (2011) study of the use of mobile phones by young people in Mozambique and Wallis' (2011) on migrant women labourers' uses of the mobile phone in China, provide insight into the impact of mobile phones on gender relationships. Whilst this PhD research is not considered as a work of anthropology, the research design was influenced by work such as these, as the ethnographic approaches used in these studies are able to illuminate the role mobile phones play in mediating personal relationships. This is explored in greater depth in *3.2 Methodology and research design*.

2.6.2 *Gender and mobile communication studies*

Given the established literature on ‘technofeminism’ (discussed in 2.4 *Theoretical tools to understand gender inequality*) and scholarship on the way that technology might ‘co-produce’ women’s gendered identity (e.g. Fox *et al.*, 2006; van Oost, 2003; Haraway, 2006; Bardzell and Bardzell, 2011) there is surprisingly little research and data on women and mobile phones. Wallis notes that although “*gendered dimensions of mobile phone use have been described, rarely has such work problematized how gender and technology are co-constructed*” (2011 p.17). Fortunati (2009) argues that it is necessary to develop research that is designed to look at the role of mobile phones in women’s lives.

One of the areas in which there has been some attention paid to gender and mobile phones, is in research on women’s communicative practices. This has explored at the ‘co-construction’ of gender and mobile technology by exploring potential differences in the way men and women communicate on mobile phones, such as whether women use mobile phone communication for relationship maintenance rather than for exchanging information. This is particularly relevant to the findings explored in *Chapter 8. Communicative affordances: portability, availability, multimediality*. Ling *et al.* reviewed the literature on gender and texting (2014) and found gender differences in the use of this medium, citing Baron (2004), Dresner and Herring (2010) and Ling (2005). They found that men were more likely than women to use SMS for instrumental purposes, whilst women were more likely to make social use of SMS. Baron and Cohen also found gender differences in instant messaging and email:

Research in the US and the UK indicates that statistically, the content of female email and instant messaging (IM) is more social in nature, while male messages more often convey information. (2012 p.14)

However, Baron and Cohen do not link these findings with feminist theory, which can illuminate how these practices may be informed by gendered expectations about women's role in relationships. In a study of Australian mobile phone users' habits, Wajcman *et al.* found that women placed a higher value overall than men in maintaining ties with relatives through the device and link this with literature that argues that this work of 'kin-keeping' is typically carried out by women (2008). They link these findings to Rakow's (1992) ethnographic study of patterns in telephone communication in which she found women were carrying out gendered work in maintaining and building relationships. In their study of young men and women's mobile communicative practices in the UK Green and Singleton also linked to Rakow's findings; finding that "*mobile technologies both blur and re-inscribe gendered identities and modes of communication*" (2013, p.45).

This section has explored empirical and theoretical work on young women and mobile communications, including approaches informed by feminist thought, highlighting gaps in the literature on the topic which are addressed in part by this study. The next section develops the capability approach, one of the key theoretical frameworks of this research.

2.7 The capability approach

The capability approach was developed by the economist Amartya Sen as a way to understand and analyse how people might live lives that they value. The approach is concerned with the possibilities open to people in their lives and provides a means to understand how people's perceptions of their own situations and capacities might be constrained by poverty or marginalisation. The approach has two elements: people's

capabilities as human beings and the opportunities they have to nurture and exercise these capabilities. In the capability approach, the goods and resources that people have access to are seen to be transformed by what are described as ‘conversion factors’ to achieve certain functionings (realised achievements and fulfilled expectations). These conversion factors are categorised as personal (such as skills and intelligence), social (such as public policies, social norms, discriminatory practices, and gender roles) and environmental (such as climate or geographical location). Other inputs – such as social institutions, people’s personal history, and social influences on decision-making – are also seen as influencing a person’s ability to achieve certain functionings.

Capabilities are not seen as equivalent to human rights; but rather as interdependent, so that without capabilities you cannot exercise rights (Sen, 2005). This is set against the monistic model of utilitarian philosophy that suggests that only utility can be taken into account and which Nussbaum suggests is unable to explain the way that people’s background and experiences can impact on their expectations and choices.

A critical scrutiny of preference and desire that would reveal the many ways in which habit, fear, low expectations and unjust background conditions deform people’s choices and even their wishes for their own lives” (Nussbaum, 2000 p.114)

Since its inception the capability approach has been widely used in both policy and academic contexts. As a normative framework that makes claims to the positive or negative values of a policy, Robeyns suggests the approach is especially appropriate for evaluating the impact of social policies on individual wellbeing (2005). We shall also see in 2.7.2 *Technology and capabilities* how the approach has been used to evaluate the impact of technology use on people’s wellbeing. On an international level the UNDP’s 1990–2004 Human Development Reports are based on the theory and in the UK the Equality and Human Rights Commission used the theory as one of three

key inputs into ‘The Equality Measurement Framework’ (2009), which was intended to be used to map the extent of inequality between individuals and groups in the UK.

2.7.1 Defining and measuring capabilities

One of the most significant schisms in the development of the capability approach has been between Sen and Nussbaum on the necessity of defining central capabilities in order to operationalise the approach. This can be understood by examining their different goals in developing the theory. Nussbaum was aiming to develop a theory of justice with her list of capabilities – a way of defining the basic entitlements that a ‘*just society*’ should provide – whilst Sen’s work, as we saw above, specifies an ‘*evaluative space*’. Robeyns claims that this means that it does not provide a theory of justice.

Moreover, a theory of justice also requires procedural components, such as the principle of non-discrimination, which the capability approach is not designed to deliver. (Robeyns, 2005 p.96)

Robeyns goes on to argue that Nussbaum’s list of ten central capabilities (2003) – which are included in full in *1.2.1. The capability approach* – present a valuational problem in that it is hard to select the most important functionings as a measure for evaluating people's quality of life and their standing in society (Alexander, 2008). Sugden suggests that these issues of context make it impossible to operationalise the approach as it would involve “*measuring the options available to a person in any given context, assessing how much opportunity the options give to that person, and comparing this opportunity with that available to other people on some scale.*” (2003, p.785).

Sen suggests that the selection of elements to be included in such lists of capabilities should be iterative, flexible and open.

The development of capability lists ought not to be viewed as a technocratic process or a matter for ‘pure theory’—but as one open to challenge and revision, and in which broader processes of public reasoning and democratic deliberation play a constitutive role. Processes of this type are necessary for selecting relevant capabilities and weighing them against each other; and the problem of domain selection should be treated as open and flexible, rather than as fixed and pre-determined. (Sen, 2004, p.77)

2.7.2 Technology and capabilities

Johnstone suggests that the capability approach is well suited to frame discussions about the role of technology in people’s lives, in that it can illuminate the role of technology in promoting or limiting people's ability to choose lives they value:

When people are able to make use of ICT to maintain meaningful associations with one another or to express themselves or to earn a living when they could not before we can legitimately claim an instrumental role for technology in expanding capability and achieving valued forms of functioning. (Johnstone, 2007, p.79)

Thus the use of mobile phones could be seen as part of the capability set of individuals that enables them to take advantage of other resources allowing them to further their valued goals in life.

Coeckelbergh (2011) sees the capability approach in this light: as a normative framework that enables the raising of ethical concerns about how technology enables people’s capabilities to be exercised. Of particular relevance to this study is Zheng and Walsham’s (2008) use of the capability approach to analyse the relationship between information communication technology and social deprivation in a study of information handling by health workers in rural hospitals in Southern Africa. They used the concept of ‘conversion factors’ from the approach to describe the information literacy skills health workers needed to make effective use of the data they were

handling, an absence of which led to restrictions on their “agency freedom” to make effective use of computers and health information. Zheng and Walsham’s effective use of the approach as an analytical tool in two very different contexts – South Africa and China – would suggest that it is not limited to use in any one setting.

Whilst it can be seen from the critiques above that there are limitations in the applicability of the capability approach to technology, it has gained traction as a conceptual framework in recent years. It has been operationalised in various ways in literature on technology and capabilities, most notably the Choice Framework, which was developed by Kleine (2010, 2013) as a means to illuminate the ways in which technology and information systems limit or allow freedom of choice. In an overview of work on ICT and the capability approach, Oosterlaken (2012) shows how this has ranged from theoretical and philosophical work to applied case studies, and works on specific technologies, including mobile phones (Sen, 2010). Oosterlaken notes that a substantial amount of this work is situated within ‘countermovements’ in the field of ICT4D. Within these countermovements the capability approach is being used to critique a view which sees access to technology as invariably promoting use and equality: instead the approach has been used by authors such as Thomas and Parayil (2008) to show how technology can increase inequalities, because it is possible that socially advantaged people are more able to convert access to technology into positive benefits in their lives than socially excluded people. This hypothesis connects with scholarship on the digital divide cited earlier in *2.5 Social and digital exclusion*, such as Zillien and Hargittai (2009) and van Dijk (2013) which has sought to theorise the links between social disadvantage and effective use of technology.

More recent work by Zheng and Stahl (2011) on technology and the capability approach recognises the strength of the approach, but sees that this form of analysis is still in its early stages and requires further development both theoretically and methodologically. So, for example, Zheng and Stahl see that the approach has a view of technology as neutral, which is at odds with the way in which technology is understood in the frameworks of social construction of technology. They argue for the use of critical theory to show how power is embedded in technology. So, for example, Zheng and Stahl suggest that work on gender and information systems (Howcroft and Trauth, 2008) and technological ‘codes’ (Feenberg, 2004) might illuminate how control and domination can be embedded in information and technical systems. Whilst there is not the space here to explore these theories in depth, Zheng and Stahl’s suggestion that such critical approaches might theoretically contribute to the capability approach resonates with this study, which uses affordances theory and technofeminist ideas to supplement the capability approach. In this PhD research, the effect of the use of a particular technology on an individual’s capabilities is seen to be affected both by the affordances of the device and by women’s gendered identity.

Other developments of the capability approach and technology are explored by Oosterlaken (2011), drawing on Lawson (2010), who looks at the role of technology in Sen’s relational ontology; arguing that technologies cannot be understood separately from their networks of use. Lawson and Oosterlaken draw on actor-network theory (Latour, 2005) to ascribe causal efficacy to technological artifacts, as well as to individuals and social structures: “*things might authorize, allow, afford, encourage, permit, suggest, influence, block, render possible, forbid, and so on*” (Latour, 2005, p.72). In an illustration of this theory that is of particular relevance to this research,

Lawson looks at how a mobile phone must be inserted into technological networks (of electricity supply and signal), but that in order to be useable must be inserted into networks of human relations.

A new phone must be inserted within technical networks where it has access to the right kind of telephone signal or the correct voltage of electricity, etc., but to be useable it must also be inserted within particular relations, which might mean being left outside the house for Amish communities or it might assume the status of a best friend for a chatty teenager. Such enrolment typically involves investing the device with meaning and aesthetics as well as politics and power. (Lawson, 2010, p.213)

In her work on choice and technology Kleine introduces the idea of a “*determinism continuum*” (2011, p.119) on which technologies can be placed depending on the degree of agency allowed to the user by the technology. Oosterlaken (2012) sees this continuum as a means of recognising that some technologies may have a negative or restrictive impact on people. The introduction of the concept of a determinism continuum might be seen as a theoretical attempt to address accusations of technological determinism in the capability approach.

2.8 Affordances

As discussed in 1.2.2 *Instrumental, maintenance and communicative affordances* above, the concept of *affordances* provides a conceptual bridge between material and semiotic (Curinga, 2014) understandings of technology. This allows us to recognise the way the meaning of a technology’s use is constructed both by the user and the users societal and cultural context (Pinch, 2009), and also recognise the actual possibilities for human action afforded by the device or system (Hutchby, 2001). Thus affordances are a means to take a more nuanced view of technology than is possible with Kleine’s linear notion of a continuum of determinism.

2.8.1 Theorising affordances across disciplines

The theory of affordances can illuminate how action can be both constrained or enabled by a technology, and so works well with research that explores the relationship between the adoption of a technology and an individual's social and economic situation. The term was originally used by the psychologist Gibson (1977), and Faraj and Azad note how he originally defined the term to escape the “*confines of cognitivism*” (2012, p27) to explain how species orient themselves to objects in terms of the possibilities for action that they perceive to be latent in the object. The concept has been widely adopted across the fields of human computer interaction, psychology, communications studies and science and technology studies (STS) but is conceptualised differently in these different disciplines.

In communication studies and human-computer interaction Sun and Hart-Davidson frame the different use of the notion of affordances in these two fields in a micro/macro sense. They suggest that in communication studies it is used quite loosely to look at the broader use (macro-) of communication technologies but in HCI the term is used to interrogate the immediate (or micro) context. The authors critique the terms' use in communication studies as vague.

Maybe because of the tendency to inspect the grand issues of technology and society, the term “affordances” also tends to be invoked rather loosely by this group of scholars. (Sun and Hart-Davidson, 2014, p.3535)

However Sun and Hart-Davidson make an exception for the work of the communication scholar Hutchby, whose work ‘*Technologies, Texts and Affordances*’ is widely cited. He provides a more specific definition:

Functional and relational aspects which frame, while not determining, the possibilities for agentic action in relation to an object. (Hutchby, 2001, p.444)

Fayard and Weeks suggest that there is an ontological division in conceptions of affordances: between a dispositional (or realist) view and a relational view. In a dispositional view, technology and human actors are separate and distinct. This could be seen as the view of those in the field of HCI such as Norman, who focused on the use of the concept of affordances in design.

The term affordance refers to the perceived and actual properties of the thing, primarily those fundamental properties that determine just how the thing could possibly be used' (Norman, 1988, p. 9).

However Fayard and Weeks argue that this approach “*seems to necessitate the classification of all possible affordances associated with different types of technology*” (2014, p.240).

It is partly in response to this dispositional view that Kaptelinin and Nardi (2012) attempted to theoretically reground affordances to take a more socio-economically and culturally grounded view that they call a ‘*mediated action perspective*’. They draw on the work of Vygotsky (1978) to develop a relational view of affordances. This understands affordances as constituted in relationships between people and the materiality of the things with which they come in contact, rather than being properties of people or of artefacts. Sun suggests that this relational approach enables a theoretical positioning which allows us to “*address issues of discursive power, cultural values and mediated agency*” (Sun and Hart-Davidson, 2014 p.3540). Treem and Leonardi suggest that this view of affordances view enables interrogations of an individual’s perceptions that a technology is *impeding* them in some way, as well as enabling action.

In the relational view, affordances of an artifact can change across different contexts even though its materiality does not. Similarly, people may perceive that an artefact offers no affordances for action, perceiving instead that it constrains their ability to carry out their goals

(2012 p.146).

This approach also allows for a dynamic, situated view of affordances, as suggested by Best.

Affordances are relationships built up with a user, and with long networks of use, including other technologies, and other users. (Best, 2009, p.1035)

However Fayard and Weeks challenge this purely relational view of affordances: suggesting that there is a half way point between a relational and a dispositional/realist approach, which they describe as an integrative approach. The authors argue that Gibson himself conceived that affordances as a dualistic concept and that this dual nature is a strength in that *“it enables us to think of actions as always materially situated yet constantly imbued with meaning and interpretation”* (2014, p.241). Fayard and Weeks also argue that the idea of affordances has conceptual limits when it comes to understanding technology use in social contexts: *“affordances get us most of the way there theoretically”* (ibid. p245) and suggest combining it with other theories such as Bourdieu’s concept of habitus.

2.9 Discussion

This review looked at theories to analyse technology use by socially excluded young women in the UK, using materialist, technofeminist theories and the capability approach to analyse gender inequality and the gendered use of technology. The inequalities experienced by these young women – and the particular challenges faced by young women entering the labour market were explored. The origins and application of the capability approach in policy and literature were then explored. It was suggested that the approach is particularly well suited to cope with two key aspects of this research – inequalities in the use of and access to technology known as

the ‘digital divide’ and gender inequality. Other approaches to understanding the links between social and digital inclusion were briefly explored, such as the use of ideas of social and cultural capital.

The digital divide in the lives of poorer young people was then explored – notably the critical role played by digital skills and access in accessing employment, and the possibly inaccurate characterisation of all young people as ‘digital natives’. A lack of research assessing the use of technology by socially excluded young people was highlighted. The role of mobile phones in ‘leapfrogging’ the digital divide was assessed in light of the dominance of these devices in young people’s lives but it was noted that there is a lack of research which might tell us how young women who are unemployed and on low-incomes use their Smartphones: whether they are replacing desktop computers and whether they are able to use these devices to access information and opportunities which might impact positively on their lives.

A critical assessment of mobile communications studies showed it to be a means to understand the fluid and evolving technological environment in which we live. However an overview of studies looking at mobile phone use by young people found that they focussed on college students rather than those young people who might be unemployed or economically inactive. The cross-disciplinary idea of affordances was examined as a way to theorise and understand the relationship between people and technology and the socio-cultural networks in which they are used. In particular an integrative view of affordances which recognizes both a functional and situated approach was explored. Finally we saw in both the capability approach and affordances how these theories have been supplemented with other approaches, such as critical theory, to strengthen their analyses of the relationship between technology

2 Mobile phones: social exclusion, gender, affordances and capabilities use and social context. This leads to the novel theoretical framework of capabilities and affordances which is explored in greater depth in the final chapter.

3 RESEARCH DESIGN

This research looks at the use of mobile phones by 30 socially excluded women in the author's home city of Brighton, and ethnographic approaches are used to ground this research in women's lived experiences. Inspired by anthropological works on mobile phones and women's lives which were reviewed above (Madianou and Miller, 2011; Wallis, 2011; Archambault, 2011), this study used qualitative approaches informed by anthropology: involvement in a small number of settings over the period of a year, semi-structured interviews and participant observation.

By researching the lives of socially excluded women and their mobile phones this research addresses the absence of gendered research in mobile communications (Fortunati, 2009). Harding describes as these absences as a "*single-society*" issue (1986 p.87); a conceptual problem whereby studies of society fail to account for the different social worlds that men and women inhabit. In response to this problem this research is inspired by feminist principles, that Jackson suggests offer "*grounded generalisations rather than universalistic, totalising models of entire societies*" (2001, p.286) and also increase the visibility of the "*subjective situation of women*" (Oakley, 2005, p.226). This research also addresses gaps in the literature and data on socially excluded women's use of mobile phones which were identified in the previous chapter, providing the opportunity to ask "*new*" questions that place women's lives and those of "*other*" marginalized groups at the center of social inquiry." (Hesse-Biber 2012, p3).

These feminist principles made it necessary for me as a researcher to critically examine my own embodied, subjective position in relation to respondents. This is in

keeping with Oakley's writing on feminist research in which she argues for abandoning any notion of 'hygienic' research in which the researcher is completely separate from respondents, which she suggests is accompanied by a "*mystification of the researcher and the researched as objective instruments of data production*" (2009, p.231). As part of this process of reflexivity, notes from the research diary are included throughout the findings chapters to illuminate my own feelings about issues which arose during fieldwork. This is also part of a response to the ethical challenges which arise in carrying out research with young, vulnerable women. This is an acknowledgement that ethics issues in research go beyond the bureaucratic "*formal conventions*" (Halse, 2005, p.2160) of the ethics review process, and require engagement with difficult life challenges faced by respondents, and a process of personal reflection on these issues.

The fact that I was carrying out ethnographic research 'at home' in a city where I have been resident for over twenty years is also related to the ethical challenges faced in research. O'Reilly contrasts this with traditional models of fieldwork which were carried out by a "*lone ethnographer in some kind of exotic outpost*" (2013, p.110). This was a key element in the research design, as the intention in this feminist research was to avoid reinforcing stereotypes (Standing, 1998), and advocates of these insider approaches argue that they are less likely to construct stereotypes or caricature communities (O'Reilly, 2009, p.114).

The original goal of this research was not to build new theory, but instead work with existing theoretical perspectives of feminism and the capability approach to explore women's use of mobile phones. However as fieldwork and data analysis progressed, critical issues emerged that led to the development of a new theoretical perspective

that combines affordances and the capability approach. The interview schedule and data analysis therefore developed to adapt to this process of theory building. The process of developing theory inductively from data is a hallmark of grounded theory (Glaser and Strauss, 1967), but this study used approaches informed by constructivist grounded theory in which the researcher aims *“to get as close to the studied phenomenon as possible.... to discern how participants meanings and actions may be connected to larger social structures and discourses of which they may be unaware”* (Charmaz and Bryant, 2011, p.293). This distinguishes the approach from earlier grounded theorising which saw the researcher as somehow separate from the social conditions they are exploring.

3.1 Research framework

This PhD research uses qualitative methodologies within a broadly constructivist framework. The use of these constructivist, critical and reflexive approaches is significant in that it goes against the trend for positivist approaches that Taipale and Fortunati (2013) saw as dominating the field of mobile communications studies. For Denzin and Lincoln constructivist qualitative research paradigms are characterised by a *“relativist ontology (there multiple realities), a subjectivist epistemologies (knower and respondent cocreate understandings) and a naturalist (in the real world) set of methodological procedures”* (2005, p24). These broadly constructivist frameworks are implicitly opposed to positivist approaches in which the researcher stands apart and *“every attempt is made to eliminate the effect of the observer by developing an explicit, standardized set of data elicitation procedures”* (Hammersley and Atkinson, 2007 p.6). Instead this research is informed by the idea that *“people construct the social world, both through their interpretations of it and through the actions based on*

those interpretations” (Hammersley, 2002). This paradigm (known both as constructivist and constructionist) “*question[s] the distinction between (and independences of) a knowing subject and an object to be known*” (Mills, 2010 p.221). By allowing that the researcher is part of the world which is shaping the data, constructivist paradigms imply that the researcher can reflect critically on their own position in the research through a process of reflexivity or a “*...a conscious experiencing of the self as both inquirer and respondent... as the one coming to know the self within the process of research itself*” (Guba and Lincoln, 2005 p.210).

3.2 Methodology and research design

It was suggested above that qualitative, constructivist research approaches are characterised by interpretative, naturalistic methods and these will be explored in further detail below. The design of the research is also informed by three aspects of the research topic, each of which has methodological implications.

1. The fact that research is a study of technology use;
2. The theoretical underpinning of the capability approach and affordances;
3. The central focus on gender inequality.

The lack of both literature and data on the use of technology by socially excluded young women was also an influence on the design of this research, as Hammersley and Atkinson suggest that this “*absence of detailed knowledge of a phenomenon or process itself represents a useful starting point for research*” (2007 p.22). As well as serving as a theoretical underpinning, the capability approach has also informed the research design.

Table 7 below compares methods that might have been used for this study, with observations on the data that could be generated from these methods and briefly describes their applicability to the research. It is intended to illuminate the choice of semi-structured interviews and participant observation as a method for this research, and to show how other methods might have been applicable had the research questions been differently structured. These methods allowed for an exploratory approach to a previously under-researched topic and the data collected illuminated unexpected issues and themes.

Table 7. *Methods comparison*

Method	Description	Data generated	Applicability to research
Semi-structured interviews	Naturalistic, flexibility to ask supplementary questions to follow up interesting lines of enquiry for the research allowing the development of theories or hypotheses.	Detailed, complex and varied data allowing for analysis of the attitudes of the participants to the phenomena under examination through the language and vocabulary used and for unexpected themes and responses to emerge	Applicable – Naturalistic, history of use in various fields (anthropology, HCI) to illuminate individual’s use of technology.
Participant observation	Naturalistic, observation and interaction with individual or group	Fieldnotes, ‘thick’ description of interactions, possible in some instances to gain ‘insider’s perspective.	Applicable – Naturalistic, history of use in various fields (anthropology, HCI) to illuminate individual’s use of technology. But lacks opportunity to systematically address instrumental uses of the phone.
Structured surveys	Standardised data collection instruments used with a large sample analysed through statistical methods	Empirical data used to make generalisations about a population	Possibly applicable – but lacks opportunity to explore hitherto under-researched topic such as this.
Focus group	Facilitated group interviews	Insight into group behaviour or opinion	Possibly applicable – but may not illuminate individual’s personal relationship with technology, especially relating to uses which are sensitive or highly personal.
Action research	Stakeholders involved in design and implementation of research	Data applied to solving social problems	Inapplicable – For this research to be considered action research the research question would have to be rephrased. For example: “How could the use of mobile phones by 16-24 year old unemployed young women contribute to their capabilities?”

3.2.1 *Researching technology*

Qualitative research methods – in particular ethnographic approaches of semi-structured interviewing and participant observation – were used, as it has been suggested that they are particularly well suited to studying the ‘meaning’ of technology. Vannini (2009) describes this as the Ethnographic imperative; since such methodologies can make sense of our practices and relationships with technology as they are embedded in everyday life.

Studies from the field of Human Computer Interaction (HCI) typically use a range of ethnographic methodologies to explore the relationship between people and technology. This study could be seen to be drawing on the tradition of ‘in the wild’ studies from the field of mobile HCI. These studies look at the use of mobile devices in their context of use, aiming to understand the importance of issues such as social settings, purpose and the need for privacy in the use of these devices outside a controlled lab environment. Kjeldskov and Skov carried out a comparison between field and lab studies of mobile phone use and see that field studies have the advantages of “*the gathering of large amount of rich and grounded data, and a high level of ecological validity*” (2014, p.2).

These approaches can yield rich, textured data, which illuminate participant’s perspectives on the structure, experiences, and meanings of their social worlds (Adler and Adler, 1987). This study applied several of the principles of ethnographic research defined by Hammersley and Atkinson (2007) in that respondents were interviewed in an everyday context and, whilst an interview schedule was used, there was significant room for discussion and informal conversation. The research also produced, in line with Hammersely and Atkinson’s definition, “*verbal descriptions, explanations, and*

theories". In terms of the overall research purpose and scope this research could be seen to be ethnographic in that it has an 'exploratory' orientation (*ibid.*) in aiming to research an under-explored area.

Although the findings of this research are largely structured around data from interviews, participant observation was also important, in that data was also gathered through observation of women's physical engagement with their mobile phones: a process described by Gobo as "*observing actions and behaviours instead of opinions and attitudes only*" (2011, p26). This participant observation approach also increased my sensitivity to issues that were arising in the setting such as respondent's frustrations when waiting for appointments and aggression expressed by some young men in the setting. By returning to the same setting over the period of a year I was able to immerse myself to a certain extent in the 'field'; a process which Gobo (*ibid.*) suggests provide access to the points of view and conceptual categories of respondents.

In contrast, quantitative studies of technology use, such as those cited in the literature review are able to provide useful data on the use of technology for a specific instrumental purpose (in this instance, seeking advice) or use by a broader group in society. An example of this type of study is that carried out by Denvir *et al.* (2011) cited in section 2.5.1 *Generational divides*. The authors analysed data from a survey of more than 10,000 adults to understand how they sought advice on legal issues on the Internet. However these approaches are not appropriate for studies such as this, which aim to understand a multitude of aspects of women's use of mobile phones in relation to their socio-economic status and relationships.

3.2.2 The capability approach

The capability approach has been widely applied in research: Robeyns identified nine different areas in which it has been used; mostly in normative research such as policy assessment.

General assessments of the human development of a country; the assessment of small scale development projects; identification of the poor in developing countries; poverty and well-being assessments in advanced economies; an analysis of deprivation of disabled people; the assessment of gender inequalities; theoretical and empirical analyses of policies; critiques on social norms, practices and discourses; and finally, the use of functionings and capabilities as concepts in non-normative research. (2006a p.361)

Hollywood and Egdell (2012) identify a tradition of qualitative research using the approach in their study of methodological issues in operationalising the capability approach in empirical research, and they suggest that it is now broadly accepted that these methods add value to the approach as an analytical method. Johnstone (2007, p.73) suggests that the capability approach is “*essentially naturalistic and functionalist in orientation*”, whilst Zimmerman develops this view of the orientation of the theory as naturalistic to suggest that ethnographic approaches are a good fit: “*Ideally it asks for an ethnographic moment and a ‘naturalistic’ approach to inquiry through the immersion into the life-worlds of transacting actors.*” (2006, p.479).

3.3 Previous research and pilot study

Detailed below is the process undertaken to pilot the research methods and methodologies detailed above, including the process of securing an initial setting for the research. The previous study that partly informed the design of this research is also explored in brief.

This study built on research carried out for an Open University MSc course in 2010. This study was entitled “*Digital exclusion and social capital; an ethnographic study of young unemployed people, social capital and mobile phones*” and the respondents were a group of unemployed young people participating in a training scheme in South London. It explored their mobile phone use using the theoretical framework of social capital – in which benefits in individual and community status are accrued through the exploitation of networks of acquaintances and contacts. This study aimed to add to the public knowledge of the use of mobile technologies by young people classified as NEET. It sought to deepen understanding of the digital exclusion faced by this group and therefore test the validity of the claim that mobile phones may be an effective means to overcome this exclusion. This was done through exploring the attitudes of the young people participating in the course to the mobile phone, using qualitative techniques of semi-structured interviews and participant observation.

The results of the study suggested that NEETs were unlikely to use their mobile phones to overcome social deprivation by looking for employment or opportunities. Unexpected findings from the study illuminated how they are making choices about technology, by revealing how the BlackBerry (a Smartphone associated with the business community) had become a dominant device by tying young people into a closed messaging network. These findings suggested that there was scope for a broader study to examine issues such as the possibility for communications offered by the affordances of mobile devices and this is explored in depth in *8 Communicative Affordances: portability, availability, multimediality*. A key question for this research was whether the functionality of a mobile phone might be a means for unemployed young people to become embedded in networks, which are seen by Strathdee (2005) as

being a vital means for advancement in contemporary society. It was unclear from this research whether young unemployed people would exploit this functionality to exploit weak ties (Granovetter, 1973) to find work and build their social capital.

This research was completed in 2010. The rich data yielded through the semi-structured interviews informed the choice of the same method for this full PhD study. The experience of undertaking the MSc research was invaluable in my skills development as a researcher. On a practical level the experience of conducting semi-structured interviews and talking to young people about technology built my confidence as a researcher. The process of organising the research gave me valuable experience in negotiating access to research settings and dealing with gatekeepers. This was undoubtedly beneficial when it came to planning and undertaking the PhD research.

3.3.1 Pilot study for PhD research

Pilot work for the PhD was carried out between January and August 2013 to test the interview schedule, sample group and setting, and the methods and findings are detailed below. Exploratory work was carried out at two research settings, which were both drop-in advice centres used by young people in Brighton. Initial exploratory work and pilot interviews with staff and young people at the centres suggested that were appropriate venues for research; based on the positive response received from senior staff as well as front-line workers. Interviews were carried out with two support workers and one young woman who was a service user at one of the drop-in centres. The interviews did not follow a detailed interview guide; instead they took an exploratory approach, with the goal of indicating significant themes in young women's use of mobile phones that might be explored in depth in the full research process.

Ethical clearance was gained for this pilot work from the Open University Human Research Ethics Committee. This included preparation of consent forms and information sheets for both studies. Possible ethical issues relating to this project included the fact that it involved interviewing potentially vulnerable young women and gaining informed consent from respondents who might have difficulty understanding consent forms that were phrased in formal language. The process of ethical clearance was instructive in that the Chair of the Committee required modifications to the submitted forms to include information about how participants might withdraw from the study. This iterative process provided useful insight into the planning of the ethical clearance process in that it showed the stages of ethical approval and it also gave an indication as to the amount of time required to gain ethical clearance for the full project.

The first interview with the member of the frontline staff highlighted the following issues, which suggested some negative aspects of the devices in young people's lives.

- Low-income young people would prioritise expenditure on mobile credit and devices – even spending money on credit instead of food. This showed how significant the devices were in young people's lives and also hinted at the theme of affordability of mobile phone contracts, which proved significant in the full research project.
- Vulnerable young women lacked skills in handling privacy and security issues on their phones. This was an issue both on social networking sites that are used on the phone, and with direct use of the phone. For example, she spoke about how young women would 'add' people as friends on Facebook whom they did

not know which might place them at risk. Similarly, they would accept calls and text messages from strangers.

- Young people often did not have the skills to differentiate their digital communications style between friends and people such as employers: using inappropriate ‘text speak’ to communicate with potential employers for example.
- There was a central role for Facebook as an effective means for frontline services (such as the YMCA) to communicate with young people.

The interview with a young female service user highlighted the following issues.

- She discussed the challenges faced by young women in managing their communications and profile on Facebook and cited examples from her friends experiences of putting up sexualised images on Facebook and not knowing how to handle the response to this issue.
- She also spoke about young people not knowing how to manage calls and messages they received on their devices from strangers and who it was safe to talk to and communicate with.
- The programme of ‘Digital by Default’ delivery of government services was spoken of in very negative terms and the respondent cited an example of the National Apprenticeships website as being very challenging to use for young people with limited digital skills.
- The interview with this young woman illuminated areas of gender stereotyping in employment: with girls associated with roles such as retail and childcare.
- She also spoke about the influence of trends and fashions in devices – for example she said that iPhones were the device of choice for young women in

2013 whereas previously BlackBerry devices were very popular (this was the case in the research carried out in 2011 where BlackBerry's were the dominant device).

- She did indicate that there was a degree of effective instrumental uses of mobile phones for finding jobs and this was evidenced by the fact that the Youth Employability Service has invested in developing a job seekers app.

The interview data raised several themes that were pursued further in the full study but also showed that this research method can yield rich data that might illuminate how mobile phones contribute to young women's capabilities to lead the lives they value. The process of carrying out the pilot study also informed the final choice of settings for the full study, as most of the interviews were carried out at one of the drop-in centres visited during this phase.

3.4 Methods

For the full study, semi-structured interviews were carried out in drop-in advice services for young people in Brighton (see details below) and data was captured from participant observation in the form of fieldnotes and observations which were included in interview transcripts. Semi-structured interviews aim to create "*analytically focused discourse that provides insights into specified research questions*" (Gibson and Brown, 2009 p.86).

As this research is concerned with the lives of young women, its design is informed by a feminist approach which suggests that we should use "*distinctive methodologies that fit the feminist goals of challenging inequality and empowering women and other marginal groups*" (Cancian, 1992, p.624). Writing about the process of interviewing

women, Anne Oakley argues that the process of interviewing women can be in itself a way to give women greater visibility and is “*a strategy for documenting women’s own accounts of their lives*” (2005, p.226). Ireland *et al.* suggest that semi-structured interviews are a particularly appropriate method for use with marginalised young women:

It is generally regarded as a young person-friendly strategy, providing opportunities for young people to talk about their lives on their own terms. Given the frequent marginalisation of young people's voices within society, the interview can be a powerful tool for – quite literally – giving voice to their experiences and concerns. This is important in a world where the meanings of young people's attitudes and actions are all too often either assumed or based on adult interpretations. (Ireland *et al.*, 2009 p.78)

Most of the interviews were carried out in a public space and were very informal, often taking the form of conversations with respondents. The naturalistic interviewing style used for data collection, which is also reflected in the transcription of the interviews, aimed to give voice to the experiences of respondents and could be seen to be closer to participant observation than formal models of semi-structured interviewing. This was intended to provide a space and form for women to convey their strong feelings about mobile phones and the impact of these devices on their lives and relationships, rather than limiting discussion to topics that were covered in the research design. In discussing what they see as the blurred dividing line between participant observation and interviews Hammersley and Atkinson contrast that these “*spontaneous, informal conversations in the course of other activities*” with “*formally arranged meetings in bounded settings*” (2007, p.108).

The full interview guide took in the region of 40 minutes to complete, but some interviews were cut short and lasted for as little as five or ten minutes. When interviews were cut short this was in response to an unwillingness to talk at length that

I sensed in some respondents. This reticence is undoubtedly linked to the fact that respondents were looking for advice at a stressful time in their lives. The flexibility of the interview format allowed both for some interviews to be cut short when respondents seemed unhappy about the interview, and also for open discussion and tangential conversations to be pursued, as recorded in fieldnotes.

Research diary extract

The fact that the interview design is quite flexible means that I can do things like do shorter interviews with women who are less keen or a bit stressed, and the women who are happy to go on a bit can do that. I've also had some interesting data from people's mums and partners when they chip in and some interesting tangential conversations which have allowed other themes to emerge.

3.4.1 Designing the interview schedule

The process of designing and modifying the interview schedule and the subsequent process of data analysis and grounded theorising, reflects the evolution of the novel theoretical framework of capabilities and affordances which developed from this research. The findings of this PhD research are structured around the instrumental, communicative and maintenance affordances of the mobile phone, and each of these affordances is critically examined to see the effect of the particular affordance on women's capabilities. However the research design did not include the theory of affordances at the start of fieldwork. The final interview schedule is included in full in Appendix I.

The initial interview schedule was based on an operationalisation of the capability approach and was developed with the overall goal of reflecting functional lists of capabilities accepted in policy and academia, in particular Nussbaum's (2003) list of Central Human Capabilities. The operationalisation and definition of central capabilities has been the subject of much debate, with fundamental disagreements on

whether it is possible to create a definitive list of capabilities. In her evaluative literature on technology and capabilities and the ‘choice framework’ Kleine (2013) recognises the difficulties in operationalising the approach, claiming that the majority of studies do not measure capabilities directly. Although there are clearly challenges in operationalising the approach, Nussbaum’s list of capabilities was used in this study as it provides a normative and evaluative framework for assessing the effect of mobile phone use on different aspects of respondent’s lives. This follows Zheng and Walsham’s suggestion that the approach is well suited to critically examine the interconnections between technology use and social exclusion.

The capability approach provides a set of concepts to unpack the relationship between technology and social exclusion as capability deprivation. (2008, p.227)

Following Kleine, no attempt was made to directly measure women’s capabilities in relation to the particular affordance of the mobile phone. If this approach had been adopted in the research design this might have limited the range of this study. For example, in the discussion of the multimediality affordance of the mobile phone the capability of “*Senses, Imagination, and Thought. Being able to use the senses, to imagine, think, and reason – and to do these things in a “truly human” way*” (Nussbaum, 2003, p.42). is used to frame a discussion on respondent’s use of the cameras on their mobile phones. This ‘looser’ interpretation of the central capabilities was intended to provide a normative framing for a discussion about the positive and negative effects of the use and ownership of mobile phones on women’s lives. The success of this approach is demonstrated in the final discussion chapter. We see in *9.1.3 Capabilities and conversion factors* and *Table 19 Impact on capabilities* that this operationalisation of the approach was a viable framework for analysis of the impact of mobile phone use on women’s lives.

The Laeken indicators (see *2.1 Defining and measuring social exclusion*) which aim to measure social exclusion, were also used to inform the design of the interview schedule. Thus the interview schedule aimed to capture data on the direct effect of women's use of their mobile phones in four aspects of their lives: health and fitness, support and advice, education and work, and life and love. These four aspects broadly relate to the Laeken indicators of low income, work, education and health. Data on these themes is analysed in *5. Instrumental affordances: mobile phones and social exclusion*.

Finally a further set of questions were included on the role of mobile phones in the context of other technology use and access: including questions on the use of public wifi and internet access in libraries. Other questions were informed by analyses of data from the pilot interviews, as detailed above. For example, the support worker who was interviewed during the pilot stage talked in depth about the financial impact of mobile phones on her clients that led to the inclusion of questions about the cost of mobile phone contracts in the full study. The service user who was interviewed during the pilot stage also spoke about the challenges of managing privacy settings on Facebook, so this issue was included in the interview topics.

Whilst the interview questions were structured around these indicators and capabilities, these concepts were modified to make them appropriate for interview questions. So, for example the capability of '*bodily health*' was explored through questions such as "*Have you ever used your phone to get health advice in confidence?*".

3.4.2 Modifications to interview schedule

As fieldwork progressed it became necessary to modify the interview design to take account both of emergent critical themes and also of categories that turned out to be ‘empty’ or irrelevant. This was part of the process of data analysis using constructivist grounded theory which led to the development of the new theoretical framework of affordances and capabilities. In this process new data is collected using theoretical sampling (Charmaz and Bryant, 2011). In the context of this research this involved collecting new data on the emergent themes of maintenance and communicative affordances, with the goal of developing a new theoretical framework.

One example of an ‘empty’ category is that the initial interview schedule included the question “*Do you ever use your phone to participate in political activities or join other groups – for example, signing petitions, or by joining campaigns on Facebook?*” that was intended to illuminate the role of mobile phones in contributing to women’s capability to exercise the right to political participation. However since no interviewees in the first months of fieldwork had shown any interest in using their mobile phones for political participation, this question was not asked in later interviews.

Other modifications were introduced to reflect the heterogeneous functionality of mobile phones that are used and configured in very personal ways. For example, women started talking about using time management tools and calendar apps, so questions about these tools were included in later interviews. Notes taking during fieldwork record how this iteration worked in practice.

Research diary extract

I've had to do a fair bit of 'modification on the fly' to the research questionnaires. The way the

interviews are working at [setting] is that I'm using the waiting time where women are waiting to be seen by staff. So sometimes I have to cut the interviews off short because the advisers are able to see them.

I also had to change the interview questions when I encountered women who were using Featurephones as the interviews were structured around women's use of Smartphone functionality such as browsing the Internet. Instead, if they had previously owned Smartphones they were asked about what they had done in the past with them. They were also asked about the ways they used the SMS and voice functions of their devices.

The modification on the fly also happened when I interviewed a woman a few months ago who didn't have a Smartphone by choice - this gave us an opportunity to go into other issues like surveillance.

More critically, other issues emerged during fieldwork that were particularly associated with the maintenance affordances of mobile phones and the dominance of the communicative affordances in women's use of their devices. So, for example, during fieldwork a theme emerged about women on low incomes being given mobile phone contracts they could not afford. The initial research design included the question "*Has spending money on your phone ever caused you financial problems?*", however a transcript reveals that the questioning used in interviews carried out in the later stages of fieldwork has a tone which implies a critical view of mobile phone companies' approach to awarding phone contracts to low income young people.

I ask her mum 'do you think they were too easy to give her a contract?' Do you think it was a bit irresponsible, that they shouldn't be giving out contracts to people who can't afford it?

Similarly, we see in 7.3 *Broken screens and fragile devices* the impact of an emergent theme about the problems caused by the vulnerability of mobile phones which was reinforced by the fact that my own phone screen broke during fieldwork. A respondent is asked "*Does it annoy you that they break?*" rather than "*How do feel about the fact that your phone breaks?*". Finally the dominance of Facebook in women's use of

mobile phones emerged in women's responses to the questions about what they looked at on their phones first thing in the morning, and what the main app was that they used on their phones. We shall see in 3.7 *Data transcription and analysis* how the emergence of these themes led to the emergence of a new theoretical framework which incorporates the maintenance and communicative affordances of mobile phones.

3.4.3 Baseline data

Where possible baseline data was captured covering the following information:

- Age
- Type of phone
- Housing status
- Employment status
- Parental status (whether they have children)
- Internet access (whether they have broadband access at home)
- Phone payment method; Contract vs pay as you go

This data is used in the findings chapters, however it should be noted that at times it was not possible to collect full baseline data for all respondents as some interviews did not yield this information, and it was at times inappropriate to pursue this line of questioning with respondents.

Research diary extract

Just listening back to person 30 and I realise that I'm badgering her a bit about her benefits / employment status - so I ask her a couple of times about this and then she says she's not on JSA, so that might well mean that she's on some kind of health related benefit. Whilst this means that my demographic statistics aren't so tidy at least I got out of her face about this and maintained some degree of respect. The rest of the interview was great and she was very personable.

Despite the fact that it would have been useful to capture income data to verify that respondents were socially excluded, questions were not asked about their income. The reasoning for this was captured in fieldnotes, which record a feeling that it would have been inappropriate and intrusive to ask for this information.

Research diary extract

For some of them I have asked what job they are doing - and I can figure out from this what kind of salary they will be on. Why am I not asking? It just feels really intrusive and I wouldn't be comfortable asking this question. If someone is having to tell you that they are living off £60-ish a week then maybe it feels unfair to get them to articulate this. I'm demanding a lot of information from people and I'm grateful, thankful for that so maybe its just human decency that I don't probe this further. It just seems rude and intrusive: amongst my friends it's only the close ones that actually know how much me and my partner earn so why should I be demanding this information from people?

3.5 Research setting and sampling

Brighton is in a wealthy area of the country but there are high levels of unemployment amongst young people and notable areas of deprivation. The city has targeted drop-in services available for NEET and homeless young people between the ages of 16-24, which provided appropriate settings for this research. The research took place in four settings: two drop-in housing advice sessions, one youth centre and one hostel. However the majority of the fieldwork (27 out of 30 interviews with respondents) took place in one particular drop-in over the period of a year, with only one interview taking place in each of the other settings. Four intermediaries who were working with socially excluded young women were also interviewed: two were employed by the drop-in centres as advisors whilst the two others worked for an employability service and with women and girls at risk of sexual violence. Three of these intermediaries were interviewed in their workplaces and one in a local café.

I chose to carry out interviews and observation work ‘on my doorstep’; carrying out fieldwork over a period of a year between October 2013 and September 2014. The choice of setting was partly informed by practical concerns related to the need to access research settings over the period of a year. But it was also related to the fact that, as a long-term resident, my connections in the city helped to overcome some barriers with gatekeepers (Hammersley and Atkinson, 2007) through easing access to possible settings. By regularly visiting at one drop-in over the period of almost a year undoubtedly helped ease my access to the setting. During fieldwork I worked reciprocally by contributing to research and discussions that were taking place about how centre staff could use social media to maintain communications with service workers. The data gathered in response to these questions these questions was analysed and included in *5.4 Mobile phones and housing*.

3.5.1 Sampling

The setting was chosen with the goal of accessing respondents who were socially excluded women between the ages of 16 and 24. All but two of the interviews took place at a drop-in advice sessions for women aged between 16-24 who had problems with housing or were facing other life challenges. The other two respondents were residents in supported housing for women who were facing life challenges such as family disputes. Only women were interviewed as this research is particularly concerned with women’s use of mobile phones and the research design was not intended to look for gender effects in the use of mobile phones (for example by also interviewing men and comparing their use). As indicated in the introduction to this chapter, this research also aims to counteract the ‘single-society’ issue (Harding, 1986)

in some previous research on mobile phones; where gender is not considered as a possible influencing factor in mobile phone use.

A form of theoretical sampling (Emmel, 2013) was used in this study as respondents were selected “*for the purpose of generating and refining theory*” (O’Reilly, 2009 p.197) about socially excluded young women: only women were interviewed in a setting where individuals were seeking help and advice on housing and other issues. Beyond making assumptions about the status of respondents based on the fact that they were accessing support and advice at the drop-in sessions it is also possible to compare their demographic data with indicators of social exclusion and this is explored below in *3.6.1 Respondents demographic profiles*. Section *3.7.1 Data analysis* below details the process of constructivist grounded theorising that was used for this study. This use of this process meant that sampling, data collection and analysis took place concurrently and I stopped doing interviews when 30 women had been interviewed and theoretical saturation (Glaser and Strauss, 1967) was achieved: so no new themes were emerging from the data. 30 interviews is also broadly seen as a satisfactory number of interviews for qualitative studies; “[a] good round number, particularly if interviews are supplemented with participant-observation” (Baker and Edwards, 2012).

By working in a familiar context ‘snowballing’ methods (Standing, 1998) were used to ease access to potential settings. For example, advice workers at one centre were able to connect me with advisors on other projects and these personal connections helped to establish relationships of trust. Snowballing methods of sampling are a particularly good fit when carrying out “*explorative, qualitative and descriptive*” (Atkinson and Flint 2003, p.275) research with “*difficult to reach or hidden populations which are*

often obscured from the view of social researchers” (ibid. p.275). This is particularly relevant in the case of research on technology use and Internet access since large scale surveys such as the Oxford Internet Survey (Dutton and Blank, 2013) are carried out in people’s homes. The implication of this is that information on the experiences of homeless young women, or women who are ‘sofa-surfing’ is potentially missing from these surveys.

Most of the interviews took place in a waiting room, with a few taking place in small side offices when the space was available. As the women often had to wait for a significant amount of time to see an advisor they were often willing to be interviewed to pass the time. Women were often using their phones to pass the time so that served as a good point to introduce the interview topic. It was always made clear to the interviewees that when an advisor was able to see them the interview would be paused. Whilst the interviews were essentially carried out in a public space, the waiting room are was large enough for women to feel able to talk freely without being concerned about intruding on other people’s personal space. The interview schedule was also designed so that sensitive topics such as sexual harassment were not covered (see *3.8.2 Reflexive discussion*).

Women were selected for inclusion in the research on the grounds of their willingness to be interviewed – so drop-in staff were not pressurising respondents to be interviewed. Fieldnotes were taken during interview sessions and subsequently written up in a research diary. This research diary data was coded in Nvivo along with the interview data.

3.6 Respondent profiles

This section profiles the respondents using their pseudonyms: firstly through brief biographic descriptions and then through an examination of the demographic data which was captured. A full breakdown of all respondents, including the intermediaries who were interviewed, is also provided in Appendix II.

Sandrine was 21 and homeless. She was working part-time at the local hospital. She had an iPhone but her contract had been cut and did not have her own computer. Sandrine relied on her phone to stay in contact with her family in Scandinavia and West Africa

Alexis was 19 and had a four month old baby. The privately rented flat she was living in was too cold for her and her baby to live comfortably, so she was looking for housing advice. She was on maternity leave from her job working in a care home. She did not have a computer at home but she did have an iPhone.

Hannah was a 21 year old stay at home mum. She had housing problems. She did not have a computer but she did have an iPad which she said she did not use because she felt it did not do anything that her phone could do.

Ashley was 24 and living with her parents. She worked part time in a pizza shop and was also at college. She had a Samsung phone and a laptop. Her favourite music was hiphop and she was a football fan.

Madison lived in supported accommodation and I interviewed her in MacDonalds. She was 17 and childless. She had an iPhone but no computer of her own. She was

doing various courses which she did not really like, but was enthusiastic about technology.

Samantha was 17. She had a childcare qualification and was about to start a catering job. She was living with her father and stepmother but was arguing with her father so wanted to move out. She had a Samsung Galaxy S4 but wanted a phone with a larger screen so she could watch films on it.

Kayla was 20. She was homeless and unemployed, although she was about to start an access course at a local further education college. Kayla was one of the few Featurephone owners interviewed, although she did have her own laptop. She said that her propensity for losing phones was one of the reasons she used a basic device. She claimed that she had had 36 phones.

Sarah was looking for an apprenticeship in care work after dropping out of college. She lived with her parents and was unable to get benefits as she was only 16. She had a Samsung Galaxy S3 and a tablet but no computer.

Alice 21 used to work in a nursery but now was a stay at home mum to her toddler son. She was living with her family having split up from her partner. She had an iPhone as well as her own computer. She was concerned about the way in which she saw her friends exposing their lives on Facebook.

Jessica was 21 and 'sofa-surfing' with friends whilst looking for a place for her and her dog to live. She was living off job seekers allowance of £115 a fortnight and looking for work as a cleaner or shop assistant. She had a Samsung Galaxy Ace and a laptop which she had been given with her mobile phone contract.

Megan was 23 and living with her parents but wanted to move out. She had NVQ qualifications in childcare and social care. She had her own computer and an iPhone. Her boyfriend paid her iPhone contract of £36 a month.

Tanya was 17 and homeless as she had argued with her dad and had to move out. She had two phones because she had a problem with her iPhone and Sim card. She used her BlackBerry for calling and texting and her iPhone for internet access.

Brittany was 22 and was studying interior design part time and looking after her baby. She had a Samsung Galaxy Ace and a tablet which she had got as part of her mobile phone contract. She also had a laptop.

Morgan was 23 and had a baby. She had a Samsung Galaxy Ace which she claimed to hate and a tablet. She said she would never put up pictures of her baby on Facebook.

Lauren was 17 and staying in temporary accommodation after having argued with her family. She was working full time in a call centre earning £3.31 an hour plus commission for this work. She had a diploma in Equine Studies and really wanted to work with horses. She had an iPhone but no computer.

Elizabeth was 20 and had a Samsung Galaxy Ace and her own computer. She had just lost her job so she was using a job seeking app on her phone to look for work but found the size of the screen annoying. She said she did not know anyone without a Smartphone.

Courtney was 20 and was homeless after having split up with her partner. She had an 11 month old baby but had not seen her for a few weeks because of her housing

problems. She used her phone for a lot of practical purposes such as to-do lists and grocery shopping.

Victoria was 23 and she was 34 weeks pregnant. She had an iPhone and a laptop. She had worked in retail as a manager before getting pregnant. She mainly used her phone for making calls and texting as she was not very keen on social networking sites. She was concerned about the poor signal strength in Brighton as she got closer to her baby's due date.

Zara was homeless and six weeks pregnant, and had lost her Smartphone at the time of the interview. She had only just got the phone and it had two years to run on the contract. She was claiming job seekers allowance and looking for work.

Katie was 20 and was a stay at home mum to her three year old son. She had an iPhone and a computer at home.

Hailey was 16 and a stay at home mum to her baby. She did not have a computer at home but liked using her iPhone to do practical things like bulk-buying nappies on Amazon and looking up information about housing and benefits.

Melissa was 16 and still living at home with her parents who were paying the contract for her Samsung Galaxy Ace. She mostly used her phone for WhatsApp communications with her friends and boyfriend.

Amanda was 17 and staying in temporary overnight accommodation. She was working part time and studying. She was living away from her family and friends who were in another town so she liked being able to keep in touch with them on her phone.

Rachel, 23, was living in a tent on the outskirts of Brighton. She was unemployed and was not able to use her phone at the time of the interview as it had been without charge for two days and she did not have enough money for credit. She wanted to work with horses.

Nicole, was 22 and pregnant. She did not like using cheap phones, so she was very happy with the iPhone five which she used to socialise.

Rebecca was 20 and had just got a job. She was being illegally evicted from her private rented accommodation. She did not have a Smartphone or computer so went to the library when she needed to get online. She preferred Featurephones to Smartphones.

Amber was 21 and lived in supported accommodation. She was a part-time student and had an iPhone which her ex-boyfriend had given her. She liked doing charity work and had fundraised money to work abroad on a charity project.

Emma was 20 and had an iPhone. She had been unemployed for six months despite having an NVQ level three qualification in travel and tourism. She preferred looking for jobs on her computer rather than on her phone.

Jordan was 19 and lived with her mother. She had a Samsung S3 and was working part time in a shop. She had a computer but no broadband access so she relied on her phone for internet access.

Caroline was 24 and the only respondent with a degree. She had a Featurephone, a laptop and a tablet. She did not want to get a Smartphone, as she did not know how

they worked, she could not afford it and she also did not see the point of going on the Internet on her phone.

3.6.1 Respondents' demographic profiles

As we saw in 2.1. *Defining and measuring social exclusion*, the following indicators are used in the Monitoring Poverty and Social Exclusion series (Aldridge *et al.*, 2013) of reports in the UK to measure social exclusion.

- Low income
- Work
- Education
- Benefits
- Housing
- Health

Whilst data was not captured on all these indicators, baseline data on housing and employment status does indicate that respondents could be categorised as socially excluded since a majority were either homeless or in unsuitable housing (for example, too damp to live in comfortably with a child) and only one woman was employed full time.

The housing situation of respondents is also influenced by the critical lack of affordable housing in Brighton, which is explored in greater depth in the next chapter.

The housing situation of respondents is broken down in the table below.

Table 8. Housing situation of respondents

Housing situation	Number of respondents
Homeless or in emergency overnight accommodation	9

In supported accommodation	2
Living with parents	6
Private rented accommodation	3
Unassigned (data not available during the interview)	4
Mothers in inappropriate housing	4
Pregnant women in inappropriate housing	2

However problems with housing could be seen as just one manifestation of more complex social exclusion issues, as reflected in the comment of Amy, a housing support worker.

It's never just about housing. In fact housing's often the last thing. Its around relationship breakdown and someone's relationship breakdown can be caused by abuse, it can be caused by substance misuse, it can be caused by someone offending, someone's relationship difficulties with their parents, their carers, their partners.

Four intermediaries working with young women in advice settings in Brighton were also interviewed in order both to triangulate the findings and also to address issues of technology related sexual violence that it was inappropriate to address directly with respondents (see 3.8 *Ethical frameworks and discussion* below). These intermediaries are given pseudonyms, which are detailed in *Appendix II Respondent names and profile*.

The group was a mixture of students, full time parents, and unemployed with just one woman working full time.

Table 9. Employment status of respondents

In education	5
Full time mother	8
Unemployed	12
Working full time	1
Working part time	4

There was also a mixture of parents, non-parents and pregnant women. The section on

Health below discusses the role that mobile phones played for mothers and pregnant women in accessing health and parenting information. Of the eight parents interviewed, seven were stay at home mums, whilst one was a student.

Table 10. Parental status of respondents

Parent	8
No child	19
Pregnant	3

The ethnic mix of respondents reflected the broader ethnic mix of the city as a whole: five out of thirty were from Black and minority ethnic groups.

3.6.2 Technology use in respondent group

The fact that over half of respondents had no access to broadband where they lived as shown in the table below is undoubtedly reflective of their housing situation.

Table 11. Respondents access to broadband

Broadband at home	10
No broadband	17
Don't know (unable to get data)	3

The same is true for computer ownership as can be seen in the table below: over half of respondents did not have their own computer.

Table 12. Respondents computer ownership

Own computer	13
No computer	16
Shared computer	1

Its not surprising that for many of these women mobile phones were the key communication technology in their lives as they were the only means they could use to get online.

When looking at the mobile phones used by the respondents in the table below the popularity of the iPhone is noteworthy, with more than half of respondents using the device as shown in the table below. The figures in this table reflect the broader UK

usage statistics for 2014, which saw 50% of all mobile users using iPhones (StatCounter Global Stats, 2014).

Table 13. Mobile phones used by respondents

Featurephone	4
iPhone	16
Other Smartphone (e.g. Samsung)	10

The table below compares Smartphone use amongst respondents in this study with national data from 2014, suggesting that their usage levels approximate to national averages.

Table 14. Smartphone use by age group: comparison of respondents with national data

Age group	
16-24	91%
25-34	86%
35-54	76%
55+	32%
Respondents in this study	87%

(Ofcom, 2014b).

3.7 Data transcription and analysis

Audio interviews with participants were recorded on a Smartphone using a simple audio recording app. This was a useful process since the phone also served as a prop for discussions during interviews. For example, the screen on the phone cracked during the time I was doing fieldwork and this proved to be a useful means to start conversations about how respondents felt about their phones breaking (see 7.2 *Broken screens and fragile devices*).

The recordings were transcribed using techniques outlined in the ‘Transcribing your own data toolkit’ produced by the ESRC National Centre for Research Methods (Burke *et al.*, 2010). Whilst transcribing the material, attempts were made to preserve the original speech of participants and the conversational style of the interviews,

following Eder and Fingerson (2002) who suggest that bringing the researcher into the text will reap better and more ‘honest’ data. For example, in places in this interview the respondent’s reaction to the notifications she was getting on her phone is recorded verbatim. This data relates to findings detailed in the 8.2.2 *Communicative platform design and capabilities*.

I keep getting notifications every five seconds and I’m like ohmigod. Yeah, like all my friends poking me or commenting on my pictures or commenting on my nephew’s pictures and I’m like ohmigod.

Some field notes were captured by hand in notebooks during fieldwork sessions whilst others were written up soon afterwards in a research diary. They served several functions as defined by O’Reilly (2009): an audit trail, an intellectual and personal diary and also as a means to illustrate research findings.

3.7.1 *Data analysis*

Data analysis initially followed a process of thematic analysis (Braun, 2006), but this was superseded by a constructivist grounded theory approach. In this approach the principles of theory building in grounded theory, in which there are cycles of data collection, coding and analysis are ‘grounded’ in specific social conditions (Mills *et al.* 2006) rather than treating the process of enquiry as separate from these conditions.

This shift in analytic strategies reflects the development of a new theoretical framework which is grounded in the data analysis: so the initial theoretical framework of the capability approach was supplemented by affordances as these themes became more important. Initial coding of data was followed by iterative stages of new data collection and re-coding under new sub-nodes, with the goal of further developing and refining categories until saturation of these categories was achieved: that is to say no

new categories or themes were identified (Baker and Edwards 2012). This process of looking for saturation is characteristic of a grounded theory approach (Glaser and Strauss, 1967). This iterative process therefore saw the initial thematic categories of the capability approach being supplemented by cross-disciplinary theories of affordances. It is this iteration of data collection and analysis which Mills *et al.* (2006) see as giving constructivist grounded theory its' strength and validity. The data was transcribed and analysed as the fieldwork progressed using Nvivo and in total approximately 15 hours of audio data was transcribed and coded.

The first phase of coding reflected themes from the capability approach and from significant themes from early fieldwork. So these initial codes were generated from the data using a set of themes which related to the 'direct capabilities' or instrumental uses women were making of their mobile phones. Coding included words, phrases and observations which were recorded as memos in Nvivo. These codes were initially clustered under four categories:

- Education and work
- Health and wellbeing
- Life and love
- Support and advice

Alongside this initial coding in four categories, a set of additional codes were generated, using the process of thematic analysis described by Braun and Clarke: "*Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code*" (2006, p.87). These included the following codes that emerged as significant during the early stages of fieldwork.

- Communication apps

- Blocking unwanted contact
- Social exclusion indicators
- Financial issues

However as the fieldwork and data analysis progressed new questions and explorations were added during the subsequent coding sessions to follow up on unexpected themes. The development of these ‘sub nodes’ is characteristic of grounded theorizing in which codes emerge from data and rather than being not imposed upon it with the goal of developing theory (Glaser and Strauss, 1967).

For two themes in particular – ‘Communication apps’ and ‘Financial issues’ – sub-codes were added and interviews recoded as these emerged as significant themes which resulted in two dedicated chapters: 6. *Maintenance affordances 1: money, credit and contracts* and 8. *Communicative Affordances: portability, availability, multimediality*. Details of the sub-nodes are shown below to illustrate the many themes which emerged during fieldwork and data analysis.

Under the Communication apps node the following sub-nodes were added:

- BBM
- Blocking unwanted contact
- Choices about apps
- Email
- Facebook
- First app in the morning
- Instagram
- Making voice calls

- Negative aspects of SNS and tools
- Skype
- SMS
- Snapchat
- Twitter
- WhatsApp

Under the Financial issues node the following sub-nodes were added:

- Financial problems caused by phones
- Problems with contracts or operators
- Positive financial management
- Mobile operators
- Contract cost or PAYG spending
- Cost of SIM only phones
- Buying apps
- Insurance
- Other people paying contracts or buying phones
- PAYG can't afford credit
- Setting up contracts for boyfriends other people

This process of adding sub nodes was accompanied by a process of revisions to the interview schedule, as detailed above in *3.4.2 Modifications to interview schedule*. In particular questions which explored the maintenance and communicative affordances of the phone. This iterative process of recoding data and revisions saw the emergence of a new theoretical framework. As fieldwork was completed and analysis progressed

it became very clear that women's capabilities to use their phones for instrumental purposes was directly impacted – often in a negative way – by the maintenance affordances of the devices in regards to their need for credit and repair. It was also clear that, for many women, their overall use of the devices was dominated by the communicative affordances: maintaining relationships through Facebook and other communication platforms.

3.8 Ethical frameworks and discussion

There are two parallel processes at work in regard to the ethical issues which arose during this research. Firstly, there is the formal process of gaining official clearance from the research ethics committee – which can be seen as a bureaucratic hoop to be jumped through – but there is also an iterative, reflexive process of examining one's own situated, subjective position in response to respondents. This section looks at both of these issues: firstly the ethical framework for the study, and then a critical examination of my position as an 'insider/outsider' during fieldwork.

3.8.1 Ethical framework

The ethical framework for this research was based on the British Sociological Association Statement of Ethical Practice. This is a good fit for this broadly sociological study, but also recognises the importance of 'situated ethics' (Ireland *et al.* 2009) in which judgements are made based on an ethical dilemma's specific context. Ireland *et al.* (ibid.) argue for the centrality of ethical practice in 'good' youth research, which cannot be divorced from broader issues of morality. Full ethical clearance was given for this project from the Open University Human Research Ethics Committee. A Disclosure and Barring Certificate was also applied for and received on

request from the managers at the chosen research settings. Respondents were not paid for their participation in this study.

The key ethical issues in this research concerned the relationship with the participants who are potentially vulnerable young people. These issues include the need to maintain the participant's confidentiality, gain their informed consent, establish their right of withdrawal and generally ensure that all efforts are made to protect them from being distressed or inconvenienced by the research process. The respondents real names are not used in this study, instead they were allocated pseudonyms. Pseudonyms are also assigned to the intermediaries who were interviewed. (see *Respondent names and profile* in Appendix II). During the fieldwork sessions informed consent was gained by reading and sharing an 'FAQ' document based on the British Sociological Association Statement of Ethical Practice covering the ethical issues above. This document outlined in accessible language what the research was concerned with and what respondent's rights were in relation to the research, including their right not to participate and also to have access to the findings. This was explained verbally to all respondents in informal language at the start of interviews and it was made clear to respondents that it would not be a problem if they wanted to withdraw their contribution at any time. The clearance form and the information sheet are included in Appendix III.

3.8.2 Reflexive discussion

Whilst these formal processes form a key part of the research ethics process, there are also critical issues which need consideration in regard to my position as a researcher. As Halse and Honey put it "*The formal conventions of the ethics review process do not exempt researchers from sensibility to the particular, embedded, and embodied*

“others” or from doing the intellectual work of reflexively analyzing the ethics and morality of their decisions or actions.” (2005, p.2160). These critical issues concern my dual position as insider/outsider in fieldwork and also difficult topics and incidents during fieldwork.

I describe my embedded, situated position during fieldwork as insider/outsider in an attempt to acknowledge the duality of my position. As a long term Brighton resident carrying out fieldwork over the period of a year in one setting near my home, I could be seen as an insider. But as a white, middle-aged, middle-class woman, it is clear that I was an outsider in an environment dominated by young, unemployed people.

The goal of carrying out research close to home was to have an ‘insider perspective’: a term which derives from traditions in ethnographic fieldwork where an individual researcher carries out fieldwork in a remote location. In contrast, ethnographers working close to home with this ‘insider perspective’, O’Reilly argues, *“have more linguistic competence with which to ask more subtle questions on more complex issues, and are better at reading non-verbal communications”* (2013, p.114). In keeping with the feminist goals of this research which include avoiding constructing stereotypes of marginalized young women, an insider ethnographic perspective gets *“...beyond the ideal to the real, daily, lived, and back-stage experiences”* (ibid. p.114). So the fact that I had been resident in Brighton for a long time meant that I had a certain shared sense of place and situated experiences with respondents. For example, I was able to discuss issues such as children’s primary schools and have conversations about the particular locality they lived in from an informed perspective.

However I was also clearly an outsider during fieldwork as I was much older and wealthier than respondents. My experiences both of feeling like an outsider and difficult moments that arose were recorded in field notes. For example, this note records an experience of wrongly perceiving that a woman was fat, when she was in fact pregnant.

Research diary extract

I was on the back foot and feeling uncomfortable today because I had a really embarrassing experience with my first interviewee - I said to this girl who was with her mum 'how long have you been looking for work?' and her mum said indignantly 'She's not looking for work! Look at her she's 36 weeks pregnant'. I felt awful because I just thought she was fat - her mum was fat and there's a lot of fat people in the group I've been interviewing. I only asked her a few questions because they were able to see her quite soon after that and I ended up not using the data - didn't get her to sign the form etc.

On another occasion there was a tension between a desire to interview a young woman and recognition of the challenges she was facing in her life, which led to the interview to be abandoned.

Research diary extract

Then I tried to interview this girl who was there with her case worker. She had mental health issues (gathered this from her conversation with case worker) and she was just pregnant. She was moaning about having to fill in the form to get housing advice which made me think about my place in these structures as another older white lady asking questions. She did say she hated her phone so that made me a bit sad that I couldn't interview her.

These issues also meant that at times the interviews varied in length.

Research diary extract

At other times - I've sensed real reluctance or shyness on the part of the women, or a sense in which I am just another person who is asking them questions about their lives. These interviews tend to be shorter as they are not so forthcoming and I don't want to persist if they are reluctant.

These difficulties meant that the span of fieldwork was relatively long: with 30 interviews with respondents and four with intermediaries recorded over the space of a

year. The pace of interviews was also slowed by interruptions caused by playing with respondent's children and discussions with other family members.

The setting proved to be a stressful environment at times, which led to several breaks in fieldwork. In field notes which discuss the fact that only women are being interviewed, it is clear that there is tension caused by the presence of potentially violent young men.

Research diary extracts

Case in point - fieldwork two weeks (maybe last week) ago; there was a guy in the waiting room who was with a case worker. He was really pissed off. He was on probation (or so I assumed). Talking about how he had just been attacked etc etc. I was a bit frightened of him.

This week - guy came up in the lift with me to the second floor who was shirtless and a bit sweaty and nervous. He was polite to me and the other women in the lift with him though. I was just really pleased I didn't have to talk to him.

A later interview with a youth worker had to be abandoned when a young man became violent in the waiting room, and security staff were called to deal with the incident. However it should be noted that the drop-in staff were always supportive, calm and professional, even when faced with angry and potentially violent clients.

At other times, though, encounters with respondents left a positive emotional impact.

Research diary extract

She was a real sweetie and I got on really well with her. I made a point of saying to her afterwards that I'd been really impressed with what she'd had to say (she was critical of phones, culture of phone use etc) and she seemed touched and pleased by that.

There were also challenges regarding challenging and sensitive topics which might potentially have been raised during fieldwork. Prior to starting fieldwork, researchers from a large Open University Health and Social Care Department study on mothering

(Thomson *et al.*, 2008) provided me with input on the research design. The researchers for this study had interviewed women on sensitive topics and they were able to provide guidance on how to deal with difficult issues that arose during fieldwork. As theirs was a longitudinal study, these researchers had a long-term engagement with respondents and were also working as part of a larger research team. They had researched sources of support to recommend to women if they raised issues such as domestic violence. Following this meeting the decision was made not to ask women about issues such as sexual harassment.

Research diary extract

One of the things I've not done in these interviews is pursued very 'charged' topics like sexual harassment or violence (other than asking if women were blocking exes on phones or SNS). I'm pleased I've made this decision as I don't think I've got the resources, training to cope with that. After talking to C at the [setting] last week about how the young women there are getting into trouble using dating sites on their phones I think I can get useful insight from intermediaries like her rather than talking to the young women directly.

Whilst this decision was ethically appropriate, it did mean that this study did not capture women's experiences of technology-facilitated sexual violence and harassment. Instead an intermediary working on a project that supported women at risk of sexual violence was interviewed, and the findings are recorded in chapter 8.

Communicative Affordances: portability, availability, multimediality.

Whilst fieldwork did present some emotional and practical challenges, my commitment to seeing it through was reinforced by the emergence of critical issues which had not previously been covered in either the mobile communications or digital inclusion literature. Significant support was also provided by my supervisory team during fieldwork. As committed feminists they provided encouragement to continue to

explore these issues to ensure that the experiences of these marginalised women would be captured.

3.9 Discussion

This section has explored the design of the research, looking at the methods used and how they relate to the overall theoretical framework. It was shown how this work was informed by the experiences of carrying out a smaller scale study for a MSc research project and by analysis of data from a pilot study. The setting of the research was described, and the methods used to recruit and select respondents. An ethical, reflexive discussion showed some of the challenges of the research process, including the difficulties experienced with some respondents and issues that arose in the setting of the drop-in advice centre.

4 RESEARCH CONTEXT

This chapter looks at of the research setting of Brighton in 2013-14 and gives an insight into the lives of young people in the city, with a particular focus on the issues of education, employment, housing and health. This profile grounds the findings of this research in the social and economic context of respondents' lives at the time when fieldwork was taking place.

4.1 Brighton

As we saw earlier in the section *1.4 Background to research*, fieldwork took place against the backdrop of a government austerity programme in response to the 2008-9 recession. Against this background of austerity, a local authority profile of Brighton from 2014 made claims as to the city's diversity, cultural strengths and tolerance.

Brighton has an extraordinary mix of natural and manmade assets. Our city is renowned for its vibrancy, culture of tolerance, its independent shops and businesses, historic lanes, array of pubs, clubs and restaurants, its varied festivals and events, stunning architecture and 13 kilometres of coastline. (Corporate Policy and Research Team Brighton & Hove City Council 2014)

In 2014 the population was approximately 275,640 with an even gender balance (Oxford Consultants for Social Inclusion (OCSI), 2014). The city has a high proportion of lesbian, gay and bisexual residents: approximately 11-15 per cent of the population aged 16 or more. It also has a large student population: at the time of the 2011 census full time students aged over 16 years accounted for 14 per cent of the population living in the city (32,920). The city has levels of ethnic diversity that are in line with the English average that is 20.2% (Oxford Consultants for Social Inclusion, 2014): 20 per cent of the population (53,351 people) are from a BME background (defined as anyone who is not White UK/British).

The creative, digital and IT sectors are economically significant in the city, and recent research has shown that these were worth an estimated £713m to the economy in 2013 (Corporate Policy and Research Team Brighton & Hove City Council, 2014). Since the 1990s, Brighton has been home to a proliferation of start-up companies in digital media and design services known to some as Silicon Beach (Sapsed and Nightingale, 2014). Culture, leisure and tourism are also significant industries in the city (Brighton & Hove City Council and Brighton & Hove Economic Partnership, 2013).

In terms of employment, in 2014 retail was the largest employment sector in Brighton, with 14% of those in employment working in this sector closely followed by health and social work at 13% (Oxford Consultants for Social Inclusion (OCSI), 2014). A buoyant report on the city's economic strategy spoke favourably of its status in face of the global recession.

Its diversity and distinctiveness gives the City a competitive economic edge. Recognised as the capital of the UK's 'rebellious alternative economy' it has weathered the impact of the Financial Crisis and flat-lining economy since 2008 relatively well - it is the third fastest recovering city' in the UK driven by the strong performance of the tourism and cultural offer as well as the maturing of the CDIT [Creative, Digital and Information Technology Sector] businesses. (Brighton & Hove City Council and Brighton & Hove Economic Partnership, 2013)

However austerity measures and the recession in general have impacted on the lives of people in Brighton: a reality that contradicts the picture of economic vibrancy claimed by the local authority in the quote above. In 2012 the city had a higher rate of claimants per available job than the rest of England with 4.4 claimants per job vacancy compared to 3.43 in the rest of the UK. There are stark economic divisions in Brighton which impact on the lives of young women: 15 areas in the City fall within the 10% most deprived in England. A needs assessment carried out by the local authority on

housing and support for young people aged 16-25 showed that Brighton compared unfavourably to other areas of the South East of England on several measures of poverty (Brighton & Hove City Council, 2012). The indicators of poverty in the city included significantly higher child poverty rates, and high numbers of children in households with no working adults, poor educational attainment and higher levels of NEET young people than in other areas of the South East.

The comprehensive Index of Multiple Deprivation (IMD) 2010 is used to measure deprivation in the UK. This index is based on a concept of linked indices of deprivation which is closely related to the idea of social exclusion discussed in *2.1 Defining and measuring social exclusion*. A profile of the city created in 2014 found that 22.5% of people in the city were living in the most deprived 20% of areas in England. In the rest of England the figure is 19.8% (Oxford Consultants for Social Inclusion, 2014).

4.2 Young people in Brighton

Brighton is a city with a high proportion of young adults in its population and this is expected to increase. This section looks briefly at the lives of these young people in relation to some key indicators of social exclusion: namely poverty, education, employment and housing.

The table below shows the number of 16-24 year olds in the city as a proportion of overall residents.

Table 15. Young People as proportion of residents - Brighton & Hove (2011) Figures based on the 2011 Census

Age of residents	Brighton & Hove	South East	England and Wales
16-24	16%	11%	12%

25-44	32%	27%	27%
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Fieldwork took place in 2013-2014 during a period of recession in the UK and as a Government austerity programme was impacting on the provision of youth services and benefits. For example, between 2012-2014 at least £60 million of funding was withdrawn from the UK's youth services. In a nationwide survey of Youth Workers in 2013, 85% reported that the cuts and austerity had caused particularly acute problems for young people from poorer backgrounds. During the same period 36% of 16-17 year olds and 18% of 18-24 year olds in the UK were unemployed, compared to 5% of 25-49 year olds and 4% of 50-64 year olds. (UNISON, 2014). A survey of young people in 2013 found that 27 per cent of young people overall believe their prospects have been “permanently damaged” by the recession. (The Princes Trust, 2013). Bella, a youth support worker working with the young women in this study reflected on the impact of the economic climate on her clients:

I ask what changes she's seen in the last few years, and what they're caused by. Is it getting worse?

Yeah

And whats it caused by?

Bedroom tax. The recession in itself. I think the recession wasn't felt immediately its still feeding in now and in the current climate and no one knowing whats going to happen in the general election.

As stated above, the city compares unfavourably to other areas of the South East of England in terms of child poverty. In 2011, 19.6 per cent of dependant children were living in poverty (Corporate Policy and Research Team Brighton & Hove City Council, 2014). Whilst this is in line with the national average (20.1 per cent), it is some way in excess of the regional average (14.6 per cent) (*ibid.*). In 2011, 4,354 young people aged 13-18 years were identified as living in one of the 20% most

deprived Lower layer Super Output Areas (LSOAs¹) in England. (Brighton & Hove City Council, 2012)

4.3 Education

In terms of education there is a notable gap in Brighton between attainment by poorer children and more affluent families. This is measured by pupil attainment at different educational stages, with Key Stage 4 being at approximately aged 16 when pupils take GCSE exams. Attainment gaps measure the difference in performance between children eligible for free school meals (generally considered a proxy for poverty) and those children whose parents/carers are considered able to pay for school lunches. In Brighton at Key Stage 4, the gap has been widening since 2009. Young women that took part in this study whose parents qualified for free school meals when they were at school were typically achieving 37% less at Key Stage 4 than children of more affluent families. This is a broader gap than in the rest of England where the figure is 27%.

4.4 Employment

As we saw in chapter three, young women are more likely to both be defined as NEET (Not in Employment, Education or Training), and to remain unemployed in later life. In Brighton from 2012-13 6.7 per cent of the city's young people between academic age 16 to 18 were NEET. (Corporate Policy and Research Team Brighton & Hove City Council, 2014). Whilst this figure was lowest level of NEETS since 2002,

¹ Super Output Areas are standard units, usually of about 1,500 people which are used for presenting local statistical information across UK National Statistics

(Brighton & Hove City Council, 2013), Emily, a youth employment advisor reflected on the type of jobs that were available to young people in Brighton:

A lot more openings for the young people... a lot more temporary and zero hour contracts though so not necessarily sustainable and not necessarily brilliant opportunities.

Zero hours contracts are a source of extreme insecurity: an employee has to be available for work whenever an employer notifies them but has no guaranteed set hours. Research by the Trades Union Congress from 2012 reported that women make up the majority (55 per cent) of Britain's growing zero-hours workforce (Trades Union Congress, 2012).

However it is important to also consider figures on those who are economically inactive as they might be seen to capture more accurately the employment status of women in Brighton. These figures include people such as women who are looking for a job but have not yet arranged childcare and so are unavailable to start, or those who are caring for other dependents (Barham, 2002). In 2013-2014 5% more women than men in Brighton between the ages of 16-24 were economically inactive (32% of men and 37.6% of women) (Office for National Statistics, 2014).

4.5 Health

The link between economic status and health is well established: "*The two are linked: the more favoured people are, socially and economically, the better their health.*" (Marmot *et al.*, 2010 p.3). The 2012 Department of Health profile for Brighton found that the health of people in the city is generally worse than the average for England as a whole (Department of Health, 2012c). The same study found that 43.5% of the population of Brighton was living in health deprivation 'hotspots': compared to

an average in the whole of England of 19.6%. These are neighbourhoods ranked among the most deprived 20% of neighbourhoods in England on the Indices of Deprivation 2010 Health domain. Whilst this covers all ages, young people in Brighton have a significantly higher level of hospital admissions for alcohol than England as a whole³ (Public Health England, 2015).

4.6 Housing

These issues of low wages and insecure employment status also impact on young women's housing options. Housing is a critical issue for young people in Brighton as housing costs are very high. The local authority's Assessment of Affordable Housing Need report 2012 identified that almost 88,000 households in Brighton & Hove (72 per cent) cannot afford market housing (either to buy or rent) without some form of subsidy or spending a disproportionate level of their income on housing costs (Corporate Policy and Research Team Brighton & Hove City Council, 2014).

Housing benefit payments, which are intended to help young people under 35 pay their rent, are limited to bed-sit accommodation or a single room in shared accommodation⁴. Since 2011 blanket cuts in benefit entitlement have meant that the amount that private sector claimants have been awarded as housing benefit has narrowed from the 50th percentile of local private rents to the 30th percentile of the market (Hodkinson and Robbins, 2013 p.68). This has serious impacts in cities such as Brighton with very high housing costs. In 2014 young people under 35 wanting to live in Brighton & Hove who were in receipt of full housing benefit would find only two affordable homes (Brighton & Hove City Council Housing Strategy Team, 2014). Hodkinson and Robbins see this as part of a challenging overall trend for renters in the

UK: *“Regardless of tenure, renting housing will be more expensive than ever before, less regulated and more precarious for all tenants”* (2013, p.72).

In 2010-2011, 1107 young people in Brighton between the ages of 16-24 were registered as looking for housing advice and a report from the local authority warned of a trend of “hidden homelessness” amongst young people.

18-25 year olds tend to be the ‘hidden homeless’ and are surviving through temporary arrangements such as staying with other people for example, ‘sofa surfing’. These young people tend to quickly exhaust options, and with no statutory support there can be a shift into entrenched homelessness and young people entering adult hostels.

(Brighton & Hove City Council, 2012 p.9)

In a study of homeless young people, Farrugia *et al.* note that these structural challenges of *“an insecure youth labour market, high levels of youth unemployment, and a hostile housing market”* impact differently on middle class and working class young people. They found that whilst *“middle-class young people are supported by families to move out of home young people experience homelessness after being deprived of familial support due to conflict, abuse and poverty”* (2015, p.5).

4.7 Discussion

This section looked at the context of this research, and the lives of the respondents. It explored in brief issues of social exclusion faced by some young women in Brighton and profiled the devices they are using in their everyday lives. Whilst both young men and women are affected by issues such as unaffordable housing and low wages, we saw in the Chapter 3 how young women are particularly at risk of suffering in the long term from the impacts of structural inequality such as low wages. The next chapter

looks in greater depth at four aspects of social exclusion and how this might relate to women's instrumental uses of mobile phones.

5 INSTRUMENTAL AFFORDANCES: MOBILE PHONES AND SOCIAL EXCLUSION

Do you have access to a computer at home?

I do not... BUT, Phone. It does everything.

Is there anything you can't do on it?

There's nothing I can't do on my phone.

Courtney was introduced at the beginning of this research and in some ways her situation exemplifies the issues faced by respondents in this study. She had a small baby and was homeless: 'sofa-surfing' at friends and relatives' houses. She was managing her day-to-day life, appointments and communications on her phone. This quote reflects her feelings about her mobile phone: that it was a multifunction device which she could use for a wide range of activities: to manage appointments, look up information she did not know and maintain vital social connections as she did not have a permanent place to live. As we saw in the previous chapter mobile phones are now a dominant technology in the lives of young people in the UK and 80% of respondents in this study used a Smartphone.

This chapter looks at how the women in this study used the possibilities for action – or instrumental affordances – offered by mobile phones to address issues in four areas of their lives: employment, education, housing and health. These aspects correspond to indicators of social exclusion that are adopted in policy contexts and also relate to elements of the Central Human Capabilities that were identified by Nussbaum (2003). The sections are framed by an analysis of the potential positive and negative role of the device with the goal of answering RQ2:

RQ2. How do the instrumental affordances of mobile phones affect the capabilities of 16-24 year old socially excluded women?

It should be noted that there is not an even balance between these four sections: this reflects the fact that instrumental uses for work and health were more widespread than education and housing in the data. In addition, these findings do not reflect the full range of activities that women in this study were undertaking with their phones or all the instrumental uses they were making of them. Instead these four areas are intended to illuminate the relationship between women's purposeful, instrumental uses of their mobile phones and their capabilities to lead lives they value in relation to key areas of social exclusion.

Quotes from respondents are given throughout the text and the pseudonyms used and basic demographic data and technology use information is included in *Appendix II Respondent names and profile*.

5.1 Instrumental affordances

This research is informed by an understanding that technological artefacts have features, or affordances, that are built into it that make it better suited for some tasks than others (Shilton *et al.*, 2013). This chapter is influenced by the 'realist' view of affordances to understand the practical uses respondents were making of their devices.

Each of the sections below therefore looks at the instrumental affordances of the device that were relevant in the particular social and temporal context. These 'instrumental' uses can be seen as purposeful, functional uses of the device for practical goals. It is useful to view this distinction from the perspective of the user experience literature, in which a distinction is made based on the goal of the user being either hedonic or utilitarian. In their study of the use of mobile Internet services Inseong *et al.* (2005, p.275) suggest that utilitarian services "*are those whose use is*

more cognitively driven, instrumental, and goal oriented". Lowry *et al.* (2013) define utilitarian services as those that are driven by 'extrinsic' motivations that are external to an individual, with 'hedonic' motivations as being those that originate inside an individual. Thus this chapter is concerned with utilitarian services, in contrast with hedonic services, which are characterised by Inseong as "*by an affective and sensory experience of aesthetic value, pleasure, and fun*" (*ibid.* p.275). In the context of this research these 'hedonic' services include the use of mobile phones for listening to music (discussed in 6.3 *Buying music*) or taking photographs (discussed in 8.5 *Multimediality*)

As discussed in 2.8 *Affordances* these findings are structured around a relational view of the affordances of a mobile phone. This implies that the phone is not at the 'centre' of the picture, but instead looks at the device in the context of the social and economic reality the women live in. Therefore this discussion should be understood against the backdrop of issues of social exclusion discussed in the previous chapter, such as the job opportunities that are available to them and the challenge of finding affordable housing.

To ground this discussion, Table 16 below shows examples of the ways in which mobile phones might contribute negatively or positively to women's ability to realise certain capabilities under these four headings. The table also shows the number of the respondents in this study that reported using the device for these purposes and how these categories might relate to Nussbaum's (2003) central capabilities.

Table 16. *Instrumental uses of mobile phones*

Category	Example of positive impact	Example of potential negative impact	Relevant Nussbaum central capability	Example interview question (see Appendix 1)	No. of respondents reporting instrumental use
Employability	Finding work.	Usability limitations mean that using device for job applications can result in poorer quality of application.	Having the right to seek employment on an equal basis with others.	Do you use your phone to look for work? Have you ever applied for a job using your phone?	8
Education	Getting qualifications using online educational resources on the device.	Usability issues making online learning difficult on a small screen.	Being able to use the senses, to imagine, think, and reason – and to do these things in a “truly human” way, a way informed and cultivated by an adequate education.	If you’re in education- is the college using your mobile to keep in touch with you? If English isn't your first language, do you ever use your device for learning English or finding out the meaning of words you are unfamiliar with? Do you ever use your phone to access training information? Or do courses online?	7
Housing	Addressing practical issues such as housing problems using support found through the device.	Cost of using device to access housing advice can be expensive.	Being able to have adequate shelter.	Did you ever use your phone to get support for practical issues - either directly through phone or access to information you found on your phone? Housing – what did you do?	7
Health	Health information found through the device.	Concerns about health impacts of mobile phone use.	Being able to have good health, including reproductive health.	Have you ever used your phone to get health advice in confidence?	8

These figures are included to give an indication of the approximate extent of use for these purposes. However not all of the interviews were able to cover all the planned topics, as discussed in *3.4.1 Designing the interview schedule*. This is related to a degree of flexibility that was built into the research design that was appropriate for the setting and the life challenges that many respondents were facing.

5.2 Mobile phones and employability

This section looks at how women used mobile phones to look for work: to fulfil the capability of *Having the right to seek employment on an equal basis with others*. As seen in *3.6 Respondents profile*, the young women interviewed for this study were predominantly unemployed, pregnant or stay at home mums. Those women that were looking for work were asked whether they used their phone for job hunting. A youth employment advisor from Brighton's Youth Employment Service, that has pioneered the use of social media to reach out to young people, was also interviewed. They use Facebook to advertise job vacancies and apprenticeships that are suitable for 16-24 year olds and have developed their own Smartphone app. The particular affordances of the device that were of use in terms of job seeking were its portability enabling respondents make or receive voice calls away from home. The ability to surf the Internet on a Smartphone meant that women were able to look for jobs and apprenticeships and fill in application forms.

5.2.1 Positive effects on employability

Work and job-hunting has been transformed by these instrumental affordances of the Smartphone, which enabled young people to make and receive calls away from home and also to search for jobs. Emily, the youth employment advisor who was interviewed

reflected on shifts in access in time she had been working with young people between 2009-2014. Her perception was that the majority of young people she works with now have some form of access to the Internet via a Smartphone for job hunting, which was not the case five years previously. For the respondents in this study mobile phones were playing a role in enabling them to look for work: both by searching online and by ringing up employers. However the affordances of a small screen and challenges with text input meant that they experienced difficulties using them to complete full job applications.

Those that were using the phone as part of a job or apprenticeship search tended to be using the device to search, rather than apply for jobs. The quote below shows how Kayla saw her phone as a way of getting an overview of apprenticeship information by ‘skim’ reading rather than using it for the full application.

So you're looking for an apprenticeship at the moment... do you use your phone for stuff like that?

Yeah I go on apprenticeships.org.

Is it easy to use on a phone?

Yeah it's not too bad... but the real website [*on a computer*] is better obviously.

And you wouldn't apply for it on your phone you'd just look at the information?

Yeah probably. It's like... you can skim read on your phone.

Emily, the youth employment advisor reflected that the success of their service lay in the fact they curated links to appropriate opportunities on their Facebook page and app. This meant that young people were able to access jobs and apprenticeships that were appropriate for their age and qualifications, rather than being faced with long lists of jobs on websites that were not appropriate. This also reflects the fact that Facebook dominates the Smartphone use of many respondents in this study: a finding that is explored in 8.2 *Young women and social media*.

Bella, a youth worker, reflected on the type of work that the women she was working with were doing.

Carework, retail, bar work, cafe jobs, call centres, youth workers, volunteering. There's a lot of minimum wage, a lot of zero hour contracts, commission based work. For the Care work they do get NVQs, which is an added bonus if they want to move on but the wages are really low and it doesn't correlate with the cost of living in Brighton.

These openings include work in sectors described by the Fawcett Society as the “*feminised, low-wage sectors of the economy*” (2014) such as care work or waitressing. These sectors dominated discussions with respondents about the kind of jobs and apprenticeships that they were doing, suggesting they were subject to structural inequality related to their gender. Sandrine was a recent immigrant to the UK. When asked what work she was doing she replied that she was working at the local hospital doing various kinds of low-income work serving food to patients and doing cleaning work.

Sarah was 16 and living with her parents after she dropped out of college. As she was under 18 she did not qualify for state benefits. She described the main things she did with her phone as follows:

Listen to music, text people, take pictures, play games, watching YouTube... stuff like that.

But Sarah was also using her phone to look for an apprenticeship. When asked what kind of apprenticeship she was looking for she replied that she was looking to work in a nursery. As an apprentice in 2014 Sarah could expect to receive £2.73 per hour[□] or £473 a month.

Research by the Young Women's Trust suggests that Sarah's choice might have been influenced by the gender-based careers advice she received. They found that Female

NEETs are three times more likely than male NEETs to have been told to think about becoming care workers, nannies, nurses or hairdressers. Meanwhile men are six times more likely to be told to think about becoming IT technicians, construction workers or electricians and plumbers (Young Women's Trust, 2014c). So whilst women were making use of their phone's instrumental affordances in ways that had a positive impact on their employability, they may well have faced gender bias in the careers advice they received. This may have been compounded by women's 'adaptive preferences' to choose to work in feminised, low-wage sectors of the economy such as childcare which their friends and peers were also working in. These preferences might well have been shaped by gender stereotypes. Knobloch argues that these divisions are caused by gender socialisation.

The gender-based division of labour is neither innate nor a social necessity, but a result of specific forms of socialisation of men and women and very much touches upon problems of justice. (2014, p.196)

Other young women were using their phones to ring up for work although, as will be explored further below, the cost of doing this was problematic for some young women.

5.2.2 Negative effects on employability

Yet whilst mobile phones were useful for job-hunting three factors emerged which impacted negatively on women's capabilities to find work: the problems of text input on mobile phones, financial challenges and the challenges of 'context collapse' when using social media sites.

The first factor is the instrumental affordances of text input on mobile phones. This meant that women were able to search for jobs on their phones but were challenged to complete application forms because of the difficulties of typing long documents and navigating complex websites. Emily, an employment advice worker, suggested that

although it was a positive development that young people were able to find work on their phones, it was possible that they were submitting poorer standards of application because they were trying to fill in forms.

You can't write long texts and young people are used to using phones in a certain way, which is quick messaging. If you're filling out a proper application form you can't behave like that. Quite often we have young people coming to see us and saying 'I've tried to do this application but it won't let me go forward on my phone' so they will come in and see us and do it on a computer instead.

Emily related these challenges in part to the fact that online job applications – even for minimum wage, low skilled jobs – were quite complex and challenging. This meant that young people she worked with would prefer sometimes to apply face-to-face for jobs rather than online.

Applications online can be pretty brutal... for an eight hour a week job in Tesco you'll have to do an English test, a maths test and a competency test and the application in full, when you've already done a CV and you could just hand that in.

And that will be for minimum wage job?

Yes I did one last week for [Large clothing retailer] for a stock room assistant, not even customer facing, and it was literacy, numeracy, competency, full application which takes a couple of hours to do.

Another respondent Melissa, who was 16 and still living at home with her parents, reported three problems with using a mobile phone for job hunting: the size of the screen, the lack of a spell-check and the speed.

So you're looking for a part-time job, would you use your phone to do that?

Sometimes I go on google and on jobsites but it is quite frustrating so I go on my mum's iPad.

What do you find frustrating about it?

It takes forever to load and it difficult to type. And you're trying to send an email but you don't want to get your spelling wrong.

Like the young people discussed by the employment adviser, Melissa preferred to ask in person for the low-income work she was applying for.

And what kind of jobs are you looking for?

Cleaning, café work, stuff like that.

And are there lots of jobs around?

On the Internet, not as much. But if you go and ask around there are more.

So do you think for those kind of jobs it is easier to go and ask around?

Yes.

Jordan was living with her mother but was having problems at home and needed to leave. She was looking for additional work to supplement her part-time shop job. She had recently applied for a job for a leading beauty company on her phone but had found it challenging and it had taken much longer than expected, even though she kept a copy of her CV on her phone to help with job hunting.

The second factor that impacted on job seeking on mobile phones related to cost. This was a problem for Jordan who reported that she had problems getting online when she was looking for jobs. Jordan was on a pay-as-you-go deal with Vodafone which supplied her with a 'bundle' for £10, comprising 100 minutes, unlimited text messages and 2 GB of data. When asked about how long this lasted her response demonstrates the financial impact of job-hunting on a mobile phone.

I try to go online on my phone but the data gets used up really quickly. When I'm applying for jobs it can only last two days but if I only use it now again maybe a week or two weeks.

Jessica had also found the call costs incurred by job hunting unaffordable and, like Jordan, found that she was spending significantly more on her phone when she used it for looking for work. She reported that her contract of £32 a month was "*just about affordable unless I go over by accident, which is easily done*".

One time I've gone over [*her allowance of minutes on her phone contract*] by £100 but it was a busy month where I was calling up for a lot of jobs... and at the end of it I went over and it was pretty much in the space of 3 days I probably put an extra £50 on my phone.

How often would you say that's happened that you've gone over?

I've had my phone about a year, probably about a third of the time.

About a third of the time you're going over... so that's a tenner a time?

Roughly... it has been stupidly more a couple of times.

For Jessica this issue was entangled with other challenges she faced in getting clear information from her mobile operator about the costs of making calls when she was over her call allowance and the fact that she was still paying for a phone contract she had taken on for an ex-boyfriend. This issue will be explored in depth in the section *6.2 Contracts and bad credit*.

The final issue which emerged as a negative impact of the use of the mobile phone for jobseeking relates to the use of Facebook, and challenges related to ‘context collapse’ (Davis and Jurgenson, 2014), whereby the social networking platform blurs interconnections between professional and personal lives. Some young people were challenged to manage these boundaries effectively, with their employers able to monitor their personal lives on Facebook. The broader issue of the use of social media platforms such as Facebook is discussed in greater depth in *8.2 Young women and social media*. For example, Tanya was 17 and she assumed that employers could see what people were posting on Facebook.

We’re talking about employment and Facebook.

Your employers can get on your Facebook now can't they?

Tanya was confused about other aspects of privacy on Facebook. When asked whether she found it difficult to adjust her privacy settings she talked about how she had mistakenly thought her Facebook profile was set to be private.

I'm not sure because Facebook changes it without telling you... I thought for a while that my Facebook was private and then someone was like ‘oh all of your privacy settings have changed’.

Does it annoy you when they do that?

Yeah. I think they should give you a note or something, then at least you can change it back.

Several respondents reported incidents where friends or family had been exposed on Facebook as misleading their employers by pretending to be sick. For example Melissa, 16, told a story about a family member who had got into trouble by being exposed on Facebook.

Do you think your employer would be looking at stuff on Facebook if you got a job?

Probably yes because I had a family member who did. Because he said he was ill and then went away to Thorpe Park and it was on Facebook at his manager saw.

Did he get the sack?

Nearly!

Alice was 21 and had a small child. She was very cautious about her social media profile, especially in relation to her child and contrasted her caution with the attitude of her peers.

People's lives are very exposed on Facebook; they tell you everywhere they're going. There's been a couple of times where they'll have their boss on Facebook and they'll write 'I'm gonna pull a sickie this weekend' and I'm like you've got your work colleagues on Facebook you can't write that! My friend done it. She was off sick for a long time she was having seizures or something and she was going out clubbing and it was on Facebook so somebody from the company went and told the manager and she ended up getting sacked for it cos she was meant to be at home.

According to Emily, the Youth employment advisor, this 'context collapse' was not just an issue for those in employment: but also for those seeking work.

So we've had a few incidents where young people have posted comments about interviews they've been to all their employers where it has resulted in disciplinary action or they've been sacked from that role.

It is possible that these challenges are related to issues of digital literacy and exclusion that were discussed in 2.5 *Social and digital exclusion*, and contributes to the complexity of mis-stereotyping of young people as 'digital natives' discussed in 2.5.1 *Generational divides*. Bella, a youth worker, commented on the disparity between the

ease of use of social networking sites and the difficulties of using a phone for instrumental purposes such as applying for jobs.

I think unless you're taught or are able to have access to the latest technology - which a lot of them don't because they are vulnerable [*meaning they were in insecure accommodation or homeless*]- they don't really know what they're doing on computers. But they're very good with things like social networking sites because they're designed to be used by everyone, and they're really easy to use. But things like the gov.uk websites - they're really difficult to use, lots of different pages to download, forms and a lot of the time now you can't go to the jobcentre to get a form you have to download it onto a computer first.

Emily, the youth employment advisor, commented on the fact that the overall literacy levels required to complete an application form – even for a minimum wage, low skilled job – seemed to be too high for some young people. This suggests that women with a lower overall level of education might be at a disadvantage in using mobile phones for instrumental purposes, since they would be likely to have lower levels of literacy.

In terms of filling in application forms it is more to do with the literacy levels than their digital literacy. They know when to click forward on an application form and when there is a required field but it is to do with the spelling and being able to follow instructions.

So it can be seen that some affordances of mobile phones enabled women in this study to search for work and fulfil the capability of “*Having the right to seek employment on an equal basis with others*”. This seemed to be the case for women who were insecurely housed and for those women who did not have access to their own computer or broadband at home. However this needs to be examined against the backdrop of levels of economic inactivity and the gendered work available to young women in Brighton which were discussed in 4.4 *Employment*. Although mobile phones might be helping them to get work through accessing job sites, women might be

finding a job that is poorly paid and insecure. A 2014 report from the Young Women's Trust commented on the work undertaken by young women in the UK.

Many of the sectors with high concentrations of young women have low pay, fewer available jobs and poorer opportunities for progression. For example, whilst there are 5 jobs for every qualified construction worker, each qualified practitioner in hair and beauty is competing with 4 other young people. (Young Women's Trust, 2014c)

In looking at the challenges of using mobile phones for employment we have also seen how the maintenance and communicative affordances impact on women's capabilities to look for employment, and these indirect affordances will be explored in later chapters.

5.3 Mobile phones and education

This section looks at the uses made by respondents of their mobile phones for educational purposes. These uses include the communication functions of the device, online education apps as well as informal access to knowledge. Many of the women interviewed for this study had relatively low educational achievements, typically a vocational qualification (NVQ) in subjects such as childcare. Four were in part time education at local colleges. Of the 30 women interviewed only one had a degree.

Madison spoke in very negative terms about her experiences of education.

So you're at college now, what do you think of it?

I hate college. I hate anything to do with education. It's boring

They don't teach you stuff you like?

I've been to three different colleges so far. I'm thinking of going to another one now.

At the time of the interview Madison was living in supported hostel accommodation away from her family. Despite her negative feelings about formal education she also

revealed later in the interview that she was passionate and knowledgeable about technology and wanted to work in the technology sector.

Rachel, who was living in a tent whilst she struggled to find affordable accommodation, spoke about her aspirations to work with horses and how she regretted sabotaging her education when she was younger.

What kind of work would you like to do?

Animal care. I started at City College and then I went to [a local agricultural college] but I got kicked out...just before the end of the year. I was silly and stupid when I was 16!

These women's experiences show how negative educational experiences might disrupt young people's life patterns and aspirations – a reflection of the damage caused to socially excluded young women's life trajectories discussed earlier.

Within the scope of this study respondents reported limited uses of mobile phones to support formal education processes, although some women were happy to look up unfamiliar words or information on Google, which could be seen as an informal educational process. The particular affordances of the device that were of relevance in this context were the ability to make voice calls to keep in contact with educators, access to online learning resources and the size of the screen. Several respondents reported a positive impact for the device in an educational context. For one woman the device had multiple educational uses and the affordance of the large screen on her phone made it useful for visual education processes.

Research diary extract

Sarah has a small child and is doing several courses. She has been on a reflexology course and has been using her device to keep in contact with her tutor via email. She is using an online learning environment called Moodle which she says works well. She is also doing an online interior design course on her phone. We discuss the fact that her phone has a large screen and how this helps her use the device for visual tasks such as studying interior design.

Other women were using their devices to maintain contact with tutors and education providers via email and SMS. For example, Amanda was 17 and was not able to live at home and was therefore living in emergency accommodation away from her hometown. She was working part time and studying and used email on her phone to keep in contact with teachers. For Samantha, aged 17, her phone enabled her to have personal, one-to-one contact with her tutor. She described how her tutor was able to provide her with support via SMS for a job interview, at which she was successful.

So when you were at college did your college have your mobile number and use it to keep in touch, did they text you?

Yeah my college tutor normally texts me to say where are you or what are you doing. He had to text me yesterday before my interview because he couldn't make it so he was like "I'm going to be a bit late because my train is delayed but just remember what we went through" and I got it!

Tanya had used her device to access information and revision videos for a biology exam and reported a positive experience of this that the information had got '*stuck in her head*' when she did this.

The device was also a way for women to access information outside formal education contexts, in a personal and immediate way. This could be seen as 'informal education': described by Le Roy and Woodcock as education which goes on outside formal learning environments. This can encompass a wide range of activities including "*an individual undertaking personal research on an issue of interest to themselves using learning resources such as books, libraries, informal trainers, the Internet etc*" (2010, p.2). This describes the way Sandrine used her mobile phone. She is from Sweden, and her family background is East African. She was 21 and spoke multiple languages, and used her phone for various informal and formal educational purposes.

Well on my last phone I had a maths app, and also for reading cos you can download the

books you wanna read.

She found her device a useful way to find out words she did not understand:

I use Google a lot if I don't know something or a word I use Google all the time.

However at the time of the interview Sandrine had broken her mobile phone contract and was only able to go online on her phone when she had access to wifi.

Some women talked about searching for information using Google on their mobile phones as second nature. Katie was a single mum of 20 with a three-year-old son, she claimed she had not been taught computer skills at school but would use her phone to look up information she did not know. Morgan was 23 and a stay-at-home mum. She was not very keen on her phone and talked about how she hated the interface but would use it for looking up spellings.

For Emily, the Youth employment advisor who was interviewed, these opportunities to access knowledge informally reinforced her view that mobile phones might be a way to raise young women's aspirations.

And for aspiration raising, they've got the world at their fingertips literally and I think that's a positive thing.

This resonates with Nussbaum's capability of "*Being able to use the senses, to imagine, think, and reason – and to do these things in a "truly human" way, a way informed and cultivated by an adequate education*" (2003). Robeyns takes the view that the capability approach allows for a view of education as "*...intrinsically important. A person may value knowing something simply for the sake of this knowledge.*" (Robeyns, 2006b p.70)

However this ease of access to information through a private device might not be seen as positive in the case of stay-at-home mum Hannah who had used her phone to cheat when she was at college.

So before you had her [baby] when you went to college...would you use it for education information?

To cheat! Just Google the answer... I use my phone for Google a lot. I Google everything!

Hannah struggled with using computers and found her phone difficult to use on occasions, so it could be argued that the fact that she used Google to look up information was contributing to her educational capabilities.

Yet, in her research on the use of the Internet by adolescents in the states, boyd argues that this practice of '*Googling everything*' belies a misunderstanding on the part of young people about the accuracy of information they find online. She found a widespread misperception that information from Google was neutral and accurate, rather than being produced by algorithms written by engineers, and manipulated by search engine optimisation practices.

Although the pages that Google offers are highly likely to be topically relevant with regard to the query, the company's employees do not try to assess the quality of a given page. There are countless sites dedicated to conspiracy theories and celebrity gossip that have a high ranking, and Google is happy to provide this content if that's what a searcher wishes to find. Google aims to provide links to pages that are relevant to the given search. This is not the same as vouching for the accuracy of those pages. (boyd, 2014a p.184)

For other women the use of mobile phones for educational purposes had been a negative experience. Amanda had experienced difficulties using the online learning environment provided by her college on her phone when she was homeless and had no access to a computer.

Do you use it [mobile phone] for education at all?

When I didn't have a computer I did. I used it to go on the college Moodle site. I used it to go on that but it was really slow.

Amanda found it difficult to revise for exams using her mobile phone, even though her teacher promoted this practice, instead Amanda preferred to make notes and revise from textbooks.

I always use my phone to download revision. And our teacher definitely promoted that. She said 'Oh it's so easy while you're on the bus just get out your phone and do a bit of revision'. Personally I just prefer revising from textbooks. I prefer making notes. I couldn't just sit on my phone and read through it again and again. It depends on the person you are.

The negative feelings of this respondent about being 'pushed' into using her mobile phone to revise shows the pitfalls of assuming that all young people are 'digital natives' as discussed in 2.5.1 *Generational divides*, who are comfortable using these tools for education. Whilst mobile phones might be a means to broaden horizons and access education for some young people these women's' negative experiences show how the affordances of the device might hinder their educational progress.

5.4 Mobile phones and housing

This section explores the way in which women were using mobile phones to access support and advice from agencies such as the YMCA, the local authority (Brighton Council) and also how they were looking for housing on their phones. Relating to the capability of "*Being able to have adequate shelter*". It looks at the positive uses that women made of these devices in this context. As discussed in 4.6 *Housing* young people face severe challenges in finding housing in Brighton where there are very limited supplies of affordable properties.

As discussed in 3.5 *Setting and case selection*, 27 of the respondents were interviewed at a drop-in advice session which provided housing advice amongst other forms of support, so this invariably meant that many of the young women I interviewed had some sort of issue with housing. They were also asked about whether they would be happy being contacted by centre staff by Facebook, as part of a consultancy process that was taking place about how centre staff could use social media to maintain communications with service workers

A quarter of the women interviewed reported using their mobile phones for housing related purposes. Amanda was 17 and at college. Her relationship with her family had broken down so she was struggling to find a place to live. She was keen to distinguish herself from her peers in her relationship to her phone.

I've never been in the phone craze really... I'm not like most girls. There is just a mentality these days you've got to have a phone and you've got to have a good phone.

She was, however, happy to use her phone to look for housing.

Do you ever use your phone to get practical advice, for example about this place?

Yes when I was in this situation where I needed to look for housing I looked online and got loads of advice like the times to come here [*to the housing advice drop-in*].

Another woman who was living with her grandparents and was signed off work with mental health issues said she had apps on her phone to help her look for housing.

Alice had been working in a nursery before she had her little boy. She was living on child benefit, tax credits and waiting for income support payments to come through. She had access to a family computer and had her own laptop but her mobile phone was the dominant device for her: "*I use my phone more than anything*". Alice was using her mobile phone to check the Homemove website, which details council and housing

association lettings, as well as information about the welfare benefits she was entitled to.

So have you used your phone to get information about what benefits you're entitled to?

Yeah definitely... I'll go onto the government website.

And do you find that easy to use?

Yeah very easy... you're able to do the benefit adviser that tells you everything you're entitled to so that's quite easy

So have you used it to apply for benefits?

I used it to go on to the Homemove website and to get numbers up to ring benefits so yeah.

Hailey also had a baby and was emailing from her phone for housing advice and was also getting information about benefits she was entitled to.

And the emailing - I do that a lot, especially for housing.

Have you been looking up housing information on your phone?

Yeah and benefits, what I'm entitled to...

And you find that quite easy to use on your phone do you?

Yeah.

Samantha had used her phone to access the website Gumtree to search for private sector housing as well as getting general housing advice.

Do you ever use your phone to get practical information, like housing or jobs or anything like that?

Yeah... I use it a lot. I'll go on Amazon, Gumtree.

There was generally positive response to the idea that housing advice services might use Facebook to keep in contact with young women; especially in a scenario in which they are able to have a single contact person whom they might contact directly. Courtney, a 20 year-old single parent responded positively to the idea.

So if the guys here wanted to get in contact with you through Facebook would that be useful?

Yeah the same person would be ideal really cos obviously then you don't have to keep explaining your situation... Yeah with the world of today everyone's on Facebook.

It is interesting to see how Courtney's response suggests that Facebook is seen as the default communication platform for some young women. The dominance of Facebook in these women's use of mobile phones is discussed in more depth in 8. *Communicative affordances*.

Elizabeth and Melissa were both happy to be in contact with housing advisors on Facebook but stated a preference for private communication with a named advisor if the housing advice service were prepared to offer such a service.

Elizabeth

So how would you feel about the guys here getting in contact with you on Facebook?

It would be more helpful... Cos you can ask them if they're open and stuff instead of calling up or coming in and then them turning round and being like I'm sorry we're about to close.

So if you were going to talk to them would it be easier to have like a person that you talk to to talk to directly or just generally Youth Advice, would you rather have an adviser?

Yeah private message would be better.

Melissa

And how would you feel about the guys here using Facebook to get in contact with you? Would that be quite useful?

It would be easy as well.

Would you rather have a person here that was your friend on Facebook that you could just message?

Yeah.

5.5 Mobile phones and health

This section explores the use of mobile phones to access health information and also how women felt their use of devices impacted on their health. The respondents in this study were using mobile phones to support their health needs in a variety of ways, most notably by accessing information online on their phones. Other aspects of mobile phone use which are relevant to this topic are covered elsewhere, including the

potential impact on mental health and the way that some respondents spoke about having feelings of being addicted to their phones. Other relevant issues include the way that devices might be used in abusive relationships, which is explored in 8. *Communicative Affordances*. The positive experiences reported in the previous section relating to the mobile phone's affordance of search and display of information, were also reflected in the way some respondents used their phones to access health information. It could be argued that this is helping them to fulfil the capability of "*Being able to have good health, including reproductive health; to be adequately nourished*".

The young women in this study reported using the official National Health Service information website, NHS Choices, which in 2013 was Europe's most popular health website with approximately 27 million visits a month (NHS Choices, 2013). This provision of health information via digital means is part of a 'digital first' policy on the part of the UK Department of Health which frames technology as offering "*unprecedented opportunities to interact with health and care services in ways that are convenient, cost-effective and reliable*" (Department of Health, 2012b p.16). This is part of the broader UK Government 'Digital by Default' policy (The Cabinet Office, 2012) which is discussed elsewhere.

The health and care system fully supports the cross-Government approach to 'digital by default', but health and care needs to take a 'digital first' rather than 'digital by default' approach. 'Digital first' makes a firm commitment to adopting digital methods to deliver healthcare, but makes clear that face-to-face contact with our health and care professionals will remain an essential, core part of our care. (Department of Health, 2012b p.23)

Baum *et al.* (2014) see this as part of a broader global trend in the adoption of digital communication strategies by health services, "*...intending that for service users this*

will improve access, convenience, timeliness and control, and for providers will save costs and resources". But Lupton critiques this trend as being a 'techno-utopian' project that fails to acknowledge social, ethical and political implications of technology use. She argues that the view of the 'digitally engaged patient' is part of a broader trend of shifting responsibility for healthcare away from the state to an individual, which she describes as a "*neoliberal political orientation to patient care and preventive health. They position lay people as ready and willing to actively engage in their own healthcare and promote their own health, in the attempt to shift the burden of such responsibilities from the state to the individual*" (Lupton, 2013, p.266).

5.5.1 Positive effects on health

Despite these broader issues with digital health, the affordance of being able to access information privately on their phones allowed women to access potentially sensitive information. Megan had been signed off work for over four years with mental health issues and used her phone for looking up health information.

So you use it for practical information?

Yeah definitely. I'm quite a doctor Google person. I look everything up! Anything! Like symptoms... or problems.

Hailey mainly used her phone to stay in contact with her partner and friends and said she did not use many apps but had used her phone to get private health advice.

Do you ever use it to get private health advice?

I have a couple of times yes.

And do you prefer that because it is completely private?

Yes.

Sarah talked about how she liked source health information online but would triangulate information from her phone with 'real life' input from her midwife:

I could probably qualify as a midwife the amount of things I looked up. I don't take everything too seriously I put it in my head and think OK that sounds a bit wrong.

Victoria and Amanda talked about how they perceived information from the official National Health Service websites as more reliable than other sources.

Victoria

I only use the NHS. I've gone through other websites and stuff like that but there's so much information on there that's scary and then you go back to your doctor and they're like don't trust them.

Amanda

Do you ever use your phone to get health advice on the NHS website?

Yes I've definitely done that yes it is really useful.

Ashley spoke about her disabilities and about how she liked to get both physical and mental health information from her phone, but also talked about how she benefitted from the affordance that her Smartphone was able to play videos. For her, video information on YouTube was more accessible than text advice that needed to be read off a screen. Ashley's experiences show how mobile phones can potentially play a positive role in supporting people with disabilities as information delivery can be adapted to meet an individual's particular needs.

Do you use your phone for health advice?

I do I do! I go on HealthMedical.. cos I've got asthma to help me deal with that. I've got illnesses with mental health problems.., to get the support that I need or if I have any problems with my eating habits... what to eat to put on weight cos I've got a fast metabolism but now I can gain weight by eating every two to three hours

So did you find that information through an app?

Yeah I got some of the information through YouTube.

And did you find it easier because it's very personal on a phone?

Yeah because I would rather see it on YouTube, because I find it really difficult reading a lot

of information because I've got comprehension difficulties. So video's better.

For Alice, and other women who had had children, the phone was a means not only to get health advice but also connect with other women during pregnancy.

So do you ever use it for practical things... like health advice or information about him [her baby]?

I had a pregnancy app that sort of told me how far along I was, what was happening... that was quite nice... There was like a forum on there so you could talk to people. It was more American so the people in that group made a UK one and its quite close knit.

Women discussed how they would use their phones a lot during pregnancy to reassure themselves about their changing bodies and symptoms: in their descriptions Hailey and Zara emphasised how much they had used the Internet during this time.

Hailey

You look at my Internet history when I was pregnant and it was ridiculous!

Zara

God... Google has been rinsed [*used a lot*] on this phone since I found out I was pregnant...

Do you find it hard to find reliable information?

No it's quite good actually. I just type in Google 'is this pain in the right side normal at this or that week' and it comes up with blogs and they're really useful because obviously every pregnancy's different so theres lots of different people's views.

Apps were also cited as ways to maintain ongoing health and fitness activities – Megan, who was overweight, was using a diet app to count calories.

I've got a dieting app on my phone

Is it a calorie counter?

Yeah

And have you found it helpful?

Yeah especially when I'm trying to lose weight.

Amanda was using an iPhone running app.

Do you ever use your phone to get health advice on the NHS website?

Yes I've definitely done that yes if it is really useful yes.

Do you prefer using your phone for that rather than the computer?

It depends. For fitness especially the iPhone it is got running apps.

Amber, who was overweight, also had plans to start using a fitness app on her phone although she had not actually started using it at the time of the interview.

I've got the 30 day ab challenge that I'm going to start doing soon. It goes 15 sit-ups, five crunches, five leg rises.

5.5.2 Negative effects on health

Several potential negative effects of mobile phone use related to health emerged: women had concerns about use of the device itself and they also faced challenges of finding reliable health information. Firstly, possible health concerns related to mobile use were raised by several women: most of whom were not citing official NHS information as they did with other health issues, but instead repeating information they had read online or been told by other people. These perceived risks are possibly related to the portability affordance of mobile phones, which means that women have them with them most of the time with some constantly wearing them in their bras or holding them.

The official health advice in the UK states that there is low risk from using mobile phones:

Research suggests it is unlikely mobile phones or base stations increase the risk of health problems, although there is greater uncertainty about potential risks from long-term use over decades. (NHS Choices, 2014)

However, none of the women reported any awareness of this official advice when they were talking about the potential health risks associated with mobile phone use.

The UK COSMOS study is jointly funded by industry and government under the Research Initiative on Health and Mobile Telecommunications (RIHMT), and is managed through the Department of Health's Policy Research Programme. This study aims to carry out long term health monitoring of a large group of people to identify any possible health issues linked to using mobile phones over a long period of time. Their website discusses the lack of a firm evidence base on this topic.

However, the widespread use of mobile phones is a relatively recent phenomenon and it is possible that adverse health effects could emerge after years of prolonged use. Evidence to date suggests that short term (less than ten years) exposure to mobile phone emissions is not associated with an increase in brain and nervous system cancers. However, regarding longer term use, the evidence base necessary to allow us to make firm judgements has not yet been accumulated. There are still significant uncertainties that can only be resolved by monitoring the health of a large cohort of phone users over a long period of time. (UK COSMOS study, 2013)

Ashley and Alexis all talked about their perceptions of health risks from using mobile phones but spoke about these risks in non-specific ways, with Ashley using the phrase "*the brain cells can start to get weak*".

Ashley

Yeah cos the brain cells can start to get weak.. its not good to keep the phone next to you while you're in bed.

Alexis

Do you worry about health risks?

My parents always tell me 'oh you shouldn't use it too much' and you always hear it on the news.... in a way I don't like it with her [baby].

Several women reported keeping their phones in their bras for easy access, and raised health concerns related to this. Courtney and her mother had been reassured by their GP that this was safe but reported that she had subsequently read information on the Internet that this was not the case.

5 Instrumental affordances: mobile phones and social exclusion

Do you ever worry about health things like holding phones near kids heads or anything like that?

No. [her mum] We keep them in our bra and I did ask the doctor once and he said he hadn't heard any concerns about it and then I read on the Internet a couple of weeks ago that it can actually cause breast cancer because of the radiation. I haven't put it in there since – the radiation seeps through the pores of your skin.

Hailey who had stopped keeping her phone in her bra because she had started getting pains.

I used to put my phone in my bra a lot, and after a few months I could feel some sort of pain so I stopped it. Kinda scary.

Rebecca was one of the few women interviewed who chose to use a Featurephone. When talking about the negative aspects of Smartphones she cited her perception that there was a connection between Smartphone use and insomnia.

It stops you from sleeping because of that bluelight thing. If you're on your phone at night there is this blue light in it and it can cause insomnia.

Alice and Samantha connected problems with migraines to mobile phone use:

Alice

Whats the first thing you look at on your phone in the morning?

I don't really in the mornings... I suffer with migraines so I try and just have a cup of coffee and try and relax...

Do you find looking at the phone makes it worse?

Yeah... early in the morning yeah.

Samantha

Do you ever worry that they're bad for your health?

You can get headaches and migraines from it.

Has that happened to you?

Yeah.

Do you think thats a big problem long term?

No cos I hold it like that [*holds phone away from ear*].

But Victoria felt that the widespread adoption of phones must mean that health risks were not an issue.

So do you worry about it with health things... like keeping it next to your ear?

I don't listen to that - if it was such a risk then there wouldn't be all the people walking around with their phones.

As detailed in the previous section, women reported valuing the ability to search for health information privately but they experienced challenges in finding reliable health advice. This could be seen to be related to a degree of 'health literacy' which is demanded of users of digital health services, described by Baum *et al.* as "the knowledge and skills which enable a person to navigate 'the health continuum': as a patient in the healthcare setting, as a person at risk of disease in the disease prevention system and as a citizen in relation to health promotion efforts" (Baum *et al.*, 2014 p.350). Baum *et al.* cite studies from Australia, the Netherlands and the United States which link low levels of educational attainment to low health literacy, arguing that it is a "*critical yet often ignored social determinant of health inequities in both developed and developing countries*" (*ibid.* p.350)

Some women, like Ashley quoted below, who were using an online NHS symptom checker on their phones felt that it tended to exaggerate the dangers of symptoms.

Do you know the symptom checker? You put all your symptoms into it and it will tell you what to do. They always, like, exaggerate on it. They're always like 'go to hospital immediately' and it scares you.

Tanya reported the same issue from using Google to search for health advice as "*they always make you feel like you've got something when you haven't*". However she was happy to use the 111 advice number provided by the NHS if she had a problem. Tanya also said that she preferred to ask her health visitor for information about her child's

health rather than looking at parenting sites; her justification being that her health visitor was very close by and accessible to her.

Katie, who was 20 and had a small child, resisted using parenting advice sites.

Do you ever get health advice on your phone?

No.

Parenting websites?

No.

Is there a reason why you don't do that? Don't trust it?

I think everyone's got a way of bringing their kid up differently. It's not like one book thing [sic].

This section has explored the effects of mobile phone use on women's health and in particular their access to health information. This access to health information is seen as a valuable function of the device, particularly during pregnancy and the affordance of providing a private, personal means to access information is particularly important. However there are also perceived – if not actual – health issues associated with mobile phone use and the challenge of finding reliable information which is not seen as scaremongering which was potentially related to respondent's health literacy.

5.6 Discussion

This chapter addressed RQ2:

RQ2. How do the instrumental affordances of mobile phones affect the capabilities 16-24 year old socially excluded women?

Some degree of positive use was being made of the phone for all these purposes – with women able to leverage the information provision affordance of the device to access information and opportunities and using the voice call affordance to contact employers

and support providers. The portability affordance of the device was undoubtedly of particular significance to the women who were insecurely housed. However in the area of work in particular the aggregation affordances, and the challenges of ‘context collapse’ on social networking sites could be seen to be limiting women’s capabilities. Usability challenges also meant that women were not able to complete application forms for jobs on their phones. Whilst this data shows how mobile phones were an effective means to deliver information on some issues it is possible to argue that the effect on their capabilities is limited by four factors: the limitations of the technology, the challenging social and economic context for young women in the UK at the time of the research, respondents’ levels of educational attainment and literacy, and the broader techno-political context.

Firstly, mobile phones were an effective way to access information but the respondents then had to act on this information to make a significant impact on issues of social exclusion. For example, whilst women were using their phones to access housing information, intense competition for housing meant that young people found it difficult to get landlords to accept them as tenants. Amy, a housing worker, described the support they needed to provide to young people in order for them to get be accepted.

If they’re on housing benefit they’re competing with professionals a lot of the time and older people. So who are landlords going to go for? A young person who’s just been evicted from the family home who has no life skills but hasn’t got enough support or someone who maybe is working? So it’s really difficult. But they do find it. There’s a lot of dodgy landlords out there and we will support them. And its about creating a package of support for that young person and supporting that young person to create a portfolio, so almost selling themselves to a landlord. So we help them get references, we help them collate all their certificates to show what they’ve achieved, any job references, character references that means they are a suitable young person to live in their property.

This quote illustrates the second issue: structural inequalities experienced by women, which are related to the social and economic context. Rafferty suggests that women will continue to be negatively impacted by the long-term effects of the recession, which will have a particular effect on women such as those in this study who are just entering the labour market.

Women in the UK will nonetheless remain as committed to the labour market as before, if not more so, but many will likely have a rougher time of it. Although the same may be said for many men, specific attacks on public sector employment and aspects of social infrastructure, which support female labour market participation, make future impacts likely to be gendered in nature. (2014, p.34)

So any positive impacts on women's capabilities in these areas from the use of mobile phones must be understood against respondents' experiences of structural inequality in employment and social infrastructure related to their gender. For the eight mothers in this study, it is likely that the unpaid care work they were carrying out would impact on their long-term 'income capability' (Bojer, 2014) which is concerned with the "*feasible choices*" that people have to earn an income. Bojer argues that income capability is partly determined for women by "*the presence or absence of legal and social pressures hindering paid work*" (2014, p.348) and that women who carry out care work suffer negative impacts on their income capability.

Unpaid work in the care and nurture of children reduces women's income capability relative to that of men in two ways: directly by limiting available time in the short term, and indirectly by reducing women's wage rates in the long term. (2014, p.349)

Finally the techno-political context in which the study took place saw an increase 'digital governance' in the UK. Whilst this is justified in terms of cost saving and efficiency – as in the case of the Government Digital Strategy (The Cabinet Office, 2012) and the Department of Health Digital Strategy (Department of Health, 2012a)

(Department of Health, 2012b) some authors argue that this signifies a change in the way government itself is conceived. This trend towards digital interaction with citizens is described by Williamson as “*automated, anticipatory and algorithmic*” digital governance of public service by actors including “*databases, algorithms and software that are programmed with the capacity to act autonomously of human oversight*” (2014, p.310). Whilst Ruppert (2012) sees this ‘*database way of thinking*’ and the increasingly large volumes of data available to governments about people’s activity as changing the very nature of what it means to be a citizen. For the young women in this study who had no computer, and were struggling to use their mobile phones to apply for jobs and look for housing it is possible to argue that they will be disadvantaged in this system of digital governance. We will see in the next chapter how the algorithmic systems of control of credit had an impact on women’s use of mobile phones, by allowing them to take on expensive mobile phone contracts even when unemployed or on low incomes.

6 MAINTENANCE AFFORDANCES 1: MONEY, CREDIT AND CONTRACTS

Does it cause you headaches having to spend quite a lot of money on your phone?

Yeah cos my other phone I'm used to it having a package on so its just £10 every month and then I'm sorted. But this one, ugh its just...walking bank account. So much money going into it.

Lauren was 17 and living in temporary overnight accommodation, so she relied on her pay as you go phone to keep in touch with friends and family. She was working in a call centre for 30 hours a week earning £3.31 an hour plus commission. She estimated she was earning roughly £100 a week. At the time of the interview on a Wednesday she had already spent £20 on topping up her phone that week. Mobile phones need economic maintenance if they are to contribute to people's capabilities, whether by topping up pay-as-you-go (PAYG) credit or regular payment of a contract. This chapter is the first of two chapters looking at the maintenance affordances of mobile phones and looks at the financial aspects of mobile phone use. The next chapter explores with the physical maintenance of mobile phones, and their need for connectivity: both of which are shown to be closely linked to women's financial status.

For the respondents in this study, who were for the most part living on benefits or in low-wage employment, this financial maintenance was a significant outlay as will be in *6.1 Affordability of mobile phones* below. For Lauren this outlay had led to a perception of her phone as a “*walking bank account*”, reflecting her feelings of frustration at how her limited income was being used up buying phone credit. In this study these challenges were not uncommon. 12 respondents (40%) reported financial problems associated with their phones, including broken contracts, being unable to afford credit or exceeding their call allowances.

In relation to women's capabilities to live lives they valued in a direct sense, the phone needs to be maintained financially in order for women to achieve the capabilities related to social exclusion explored in the previous chapter. There were indications that lack of credit was impeding women's capabilities to look for work, as explored in 5.2. *Mobile phones and employability*. In a broader sense, it could be argued the money that respondents were spending on their mobile phones was money they were unable to spend on other goods and services that may have impacted more positively on their capabilities. Also, the fact that for some women extra complications arising from maintaining contracts for ex-partners suggests that mobile phones were having a negative effect on their relationships in a way which is gendered.

To understand the complexity of the impact of the financial maintenance a mobile phone requires it is illuminating to view it as part of a bigger technological 'assemblage'. This assemblage includes not only the device itself but the systems which support its use: paying operators for contracts or PAYG credit, the operating system, and the systems of payment for for music and apps.

Digital technologies are embedded in a vastly collective, networked form of control, not only due to the inherently collective aspects of all technological assemblages, but also due to the increasingly remote and wide-ranging aspects of digital systems and structures. (Best and Tozer, 2013 p.415)

This chapter explores the impacts of these systems and structures of control that relate to the financial maintenance of mobile phones for the young women in this study with the aim of answering RQ3:

RQ3. How do the maintenance affordances of mobile phones affect the capabilities of 16-24 year old socially excluded women ?

This chapter covers the financial issues respondents faced maintaining mobile phone contracts and topping up their PAYG (pay-as-you-go) credit, including the experiences of young women who had taken on mobile phone contracts for their partners and were left paying for them when they split up. Finally the financial aspects of purchasing apps and music for the phone are explored.

6.1 Affordability of mobile phones

So do you think phones are too expensive for young people?

I think its normal. I think they're good prices for all the things they do.

Madison was spending about £20 a month on her PAYG phone and her comment reflects a perception that young people's spending on their phone is '*normal*'. Madison's view on mobile phone affordability might reflect the fact that these young women have grown up with mobile phones so they are used to accounting for this expenditure as part of their overall spending. This view was reinforced by Amy, a housing advice worker, who commented on how spending on mobile phones had changed in recent years.

I think when we were doing budgetting [*with young people*] six or seven years ago a mobile phone wasn't necessarily a priority for young people but it is a priority now. And actually so they would probably choose that [*a mobile phone*] over maybe going out and that's kind of the difference we've seen.

Of the 30 women interviewed in this study 18 (60%) had contracts and 12 (40%) on were on PAYG. The mechanisms of mobile phone contracts are discussed in greater depth in the next section *6.2 Contracts and bad credit*. These contract figures are slightly lower than those for the overall UK population at the time of the research. Ofcom data from 2014 showed that two-thirds (65%) of mobile users have a contract service, with the majority (57%) on at least a 12-month contract. In the 16-24 age

group, Ofcom data showed that 75% were on contracts in 2014 (Ofcom, 2015a). These contracts are typically more than a year in length: Ofcom figures for 2014 showed that 60% of contracts were 24 months long. It is possible that the length of these contracts contributed in part to financial problems experienced by some young women in relation to mobile phones, as they were experiencing life transitions in and out of work, relationships and housing situations.

An examination of the affordability of mobile phone contracts as a percentage of income will show why this may have been the case. The table below shows the percentage of monthly income women in this study might be paying for a typical £34 a month phone contract. Figures are given both for those in minimum wage jobs and on the kind of benefits the women in this study were in receipt of. For the purposes of comparison the figure is also given for the average UK salary at the time of the research.

Table 17. Mobile phone affordability

	Hourly pay £	Weekly pay/benefits £	Monthly pay/benefits £	Cost of £34/month phone contract as % of monthly income
Minimum wages and apprenticeship payments[□]				
Apprenticeship	2.73	£109.20	£473.20	7%
Minimum wage 16-17	3.72	£148.80	£644.80	5%
Minimum wage 18 -20	5.03	201.2	£871.87	4%
Minimum wage 21 and over	6.31	252.4	£1,093.73	3%
Benefits rates				
Contribution based Jobseekers allowance 18 to 24		£57.35	£248.52	14%
Maternity benefits		138.18	£598.78	6%
Average UK salary May 2014 [□]		474	£2,054.00	2%

Figures based on benefit and average salary rates taken from <http://www.ons.gov.uk/> and <https://www.gov.uk/browse/benefits>

6.1.1 *The poverty premium for mobile services*

During the time fieldwork was taking place the cost of mobile phone connections fell by 3.9% in real terms (Ofcom, 2015a p, 142) so the high percentage figures shown in the table above are an instance of the ‘poverty premium’, whereby poorer members of society pay as much as 10% extra for utilities and credit. A report on the poverty premium argued for treating mobile phones and the Internet as an essential foundation to an acceptable living standard. This report found that *“people on low incomes are not best positioned to become ‘active consumers’ to take advantage of competitive markets in telecommunications, and at worst are vulnerable to exploitation”* (Hirsch, 2013 p.7).

The argument that people on lower incomes are not typically ‘active consumers’ is reinforced by Ofcom research that measured a wide range of ways ways that people participate in communications markets, including switching suppliers, staying informed, and being aware of changes in the markets. Data from this research showed that mobile consumers in socio-economic group DE more likely to be ‘inactive’ than other groups. In 2014 in the mobile market, consumers in the AB and C1 socio-economic groups are more likely to be ‘active consumers’ (17% and 20% respectively) than those in the C2 and DE socioeconomic groups (15% and 10% respectively). Comparison to data from 2013 showed that the level of engagement among DE consumers halved (from 21% in 2013 to 10% in 2014), whereas other socio-economic groups remained unchanged in this respect. In line with this, DE consumers in the mobile market were more likely to be inactive (40%) or passive (16%) than consumers in each of the other socio-economic groups (Ofcom, 2015a, p.159).

Like the consumers in the Ofcom study, some of the respondents in this PhD research were 'inactive' or 'passive' consumers in mobile communications markets; placing a higher priority on getting a particular model of phone than a lower cost contract. So when they were asked about their reasons for choosing a particular contract, several women talked about how getting an iPhone had been a determining factor rather than value for money. For example, Nicole was 22 and pregnant. She had just got an iPhone 5 on contract for £32 a month and the quote below shows how her perception that this particular model of phone was easy to use informed her choice.

Why did you choose the iPhone?

I don't know because it is easy to work with.

Was it important to you to have a Smartphone?

I can't work with cheap phones.

Have you tried cheap phones before?

Yeah there's nothing on them you can't get Internet.

However this was not the case for all respondents. Other women were choosing payment options based on affordability rather than desire for an iPhone or unlimited data. Amanda, 17, had a second-hand iPhone and had chosen a bundle for £10 a month as she was on a very limited income. Kayla, who was 20 and homeless, was one of only four feature-phone users in the study. She had chosen her £10 Samsung because she was prone to losing phones and was spending £2.50 a week on PAYG top-ups.

I ask why she hasn't got a Smartphone.

If I had a Smartphone I'd lose it within like a day.

So you choosing the phone - you wanted to keep the costs down?

Well considering I lose phones so often, there's no point spending lots of money on them!

So it can be seen that mobile phones were a significant expenditure for many of the women in this study and that, as a proportion of their income, they were spending as much as 10% more than the average British consumer on their phones. This suggests

that they were paying a ‘poverty premium’. It also seems as if some women were not looking for the best value phone, but were instead basing their choice on their wish for an iPhone, such as in the example of Nicole, cited above.

6.2 Contracts and bad credit

So when they gave you a contract how much questioning did they give you about your credit status, whether you were working?

Well I've got absolutely shocking credit so that's why I kind of jumped for joy when they gave me this last contract because I haven't really got the best of credit. So I was surprised when the thing went through to be honest.

Zara was pregnant, unemployed and homeless. She had just lost her contract phone, only weeks after getting it. As we saw in the last section, more than half of the women interviewed had contract phones. Because of this they, like Zara, had a degree of familiarity with the impact of scoring mechanisms used by credit agencies to decide whether they would be given a mobile phone contract. Hence Zara's use of the phrase *“I've got absolutely shocking credit”*, meaning she had a bad credit record, possibly after having failed to repay debts in the past.

Mobile phone contracts are partly comprised of loan agreements on the purchase of a phone, with the other parts being payment for voice and data services. They represent an engagement by these young respondents into the *“highly unequal and uncertain relation”* of credit (Langely, 2014). It is possible to argue that it is irresponsible for mobile phone operators to be giving phone contracts to women who ultimately might have trouble paying them owing to being unemployed or low wages, especially when the effective interest rates are extremely high. Analysis by a leading UK consumer site in 2014 found that the amount paid for a new iPhone on a two-year contract is

equivalent to buying the phone with a 48% APR two-year loan (Evans and Money Saving Expert, 2014).

Courtney had caused her mother financial problems when she had to pay off her phone debt when Courtney was not working.

I ask her mum 'do you think they were too easy to give her a contract?'

I think so yeah.

Do you think it was a bit irresponsible, that they shouldn't be giving out contracts to people who can't afford it?

I do but some people will go and get their phone because they need it. It is not a social thing. Sometimes people need it for work or childcare or whatever.

Courtney's mother's view expressed in the phrase "*It is not a social thing*" shows the tension between young women's desire for a phone for practical purposes and the financial problems caused by taking on contracts they could not afford.

The entry of the low income women in this study to these agreements at a relatively young age could be seen as part of a broader picture of household indebtedness in the UK which Montgomerie relates to the political climate of austerity after the 2008 financial crisis. In her analysis the availability of credit for low-income households was a means to sustain levels consumption at a time of financial crisis: "*Households are expected to absorb public spending cuts, job loss and wage stagnation at the same time as using debt to consume as if the economy was booming*" (Montgomerie, 2014, p.15).

Like Zara, Nicole was also surprised that she had been given an iPhone contract. She was 22 and unemployed and 13 weeks pregnant. She had had her iPhone five on a contract of £32 a month for two weeks at the time of the interview. She was very

attached to her phone and had been very pleased when she had been given the contract.

Because I've got a bad credit rating I didn't think I'd be accepted so when I got it I was like, yes!

So you were quite surprised?

Yes

The purpose of the credit scoring system that Nicole mentioned is a means of assessing the likelihood that a credit consumer will default on their debt. It is based on their employment, financial, residential and family histories. Langley describes these mechanisms whereby consumers are ranked and scored as a “credit panopticon” which might be seen to be serving a political purpose: *“an increasingly pervasive means of surveillance that divides “good” from “bad” credit consumers and which produces “docile bodies” who meet their repayments”* (Langley, 2014, p.455). From their remarks we can see that Nicole and Zara were aware that their credit score might be bad and that this information – described by Langley as *“disciplinary numbering”* – would be shared between businesses and other market spaces. Yet Bella, a youth support worker, said that she thought that young people were subverting this credit system to try and get contracts by changing personal information.

I think it's very easy to get a contract. People change their names and bank details all the time.

So whilst a few young people might be attempting to defraud the mobile phone system, it is clear that others in this study were getting contracts despite their unstable living and financial situations. We shall see in the next section that one of the consequences of this was that some women were breaking their contracts.

However not all respondents with bad credit scores had been successful in getting contracts. Morgan was 23 and mother to a baby girl and had been refused a contract because of her bad credit after having taken out a contract that her boyfriend had refused to pay off.

I used to have a contract but my credit is too bad now I abused my contract [*she laughs*].

Did you go over?

Yeah... I had two contracts in my name [one for boyfriend] and HE [*Morgan's emphasis*] went over and I refused to pay it so they won't have me any more.

6.2.1 Breaking mobile phone contracts

Morgan was not the only woman interviewed who had broken her contract after not being able to pay it. This could be related to the high relative cost of phone contracts discussed in 6.1.1 *The poverty premium for mobile services*. This is not an issue limited to respondents in this research, but can be seen in the broader UK population. UK-wide research by Ofcom in 2014 found that 2% of respondents had communications debt and that 4% did not have a service “because of cost” (this includes debts related to TV, broadband and landline as well as mobile phones). In relation to the age and socio-economic classification of respondents in this study, it is interesting to note that young people and poorer people were more likely to report not having communications services because of cost. 16-34 year olds were more likely than the older age group (65+) to report this (24% vs.15%). Those in the DE socio-economic group were also more likely than those in the AB or C1/C2 socio-economic groups to name a service they did not have because of cost (24% vs. 16% and 19% respectively) (Ofcom, 2015a, p.122)

Sandrine’s contract had been cut because of issues related to her unstable working conditions: fluctuations in her income meant she was not able to keep up contract

payments. At the time of the interview she was homeless. She was working at the local hospital in low-salaried roles in cleaning and serving food to patients. She blamed her inability to pay her contract on the fact that she was not being paid at work. From the interview it seemed as if she had been given the contract when her income was steadier and her housing situation was more settled.

The contract has been cut, basically...

Your contract's been cut off? Oh no, that's really annoying

It's because I pay every fourth month but right now, like, I'm not getting paid at work.

So you've got no way of using your phone?

Sometimes if I have a wifi [sic]... then it will work.

Cos they're expensive, iphones, aren't they, expensive to use? How much was your contract for?

Actually it was just £36 a month

That's still a lot of money!

Well when I was living with my Dad's friend and I was working and I was getting paid...that's when I get the contract. Before I was pay as you go.

So it is a long-term contract. They're hard to get out of as well.

Yes because I've been asking, and I think you have to pay the whole thing off.

So you're pretty much stuck without?

Yeah pretty much stuck without.

This break in the contract meant that Sandrine was only able to use her phone to contact her family when she got access to wifi. This was problematic for her since her family was in Scandanavia and West Africa and she was therefore having problems contacting them. The change in circumstances, which Sandrine had experienced, had also affected Zara. She had lost her phone with two years left to run on the contract and had also just found out she was pregnant. She was paying £38 a month for the phone but had stopped the payments.

Was it insured?

It was but I didn't pay the insurance...

So have you still got to pay the contract for it?

Erm I'm kind of not paying that at the moment

Have you got a long time to run on the contract?

Two years.

Are you going to call them up and say I'm not going to pay it?

No I'm just going to leave it at the moment because I'm newly pregnant and I'm a bit worried.

Zara was obviously facing a multitude of challenges in her life since she was unemployed, homeless and pregnant. Having to pay £38 a month whilst on benefits for a phone she had lost was a serious concern, as she also had to find money to pay for the replacement PAYG phone she was using. Zara's feeling of being so overwhelmed by this debt that she was 'just going to leave it' was familiar to Amy, a housing advisor.

Well young people don't have any money at the moment at all anyway. The benefits are really shit, the housing benefit is shit. If they're not getting any support from their parents then to have a huge phone bill is just going to add to the stuff. And all of a sudden they're borrowing money off friends and stuff like that so it just becomes a whirlwind and I think young people get extremely lost within that, not knowing quite how to get out of it.

For women like Zara and Sandrine it is possible to argue that this break in their contracts meant that mobile phones were having a negative impact on her capabilities by cutting them off from Internet and voice connections. Had these women continued to default on their contract payments this may have also had a negative effect on their credit ratings, which could potentially have an impact later on in life for them when trying to access further credit for loans or mortgages. Both had housing problems. Sandrine was reliant on finding sources of free wifi to connect with friends and family, whereas Zara was using a Featurephone and was relying on her boyfriends' Smartphone to get online.

6.2.2 *Extra phone contracts for partners*

For some women, financial issues with mobile phone contracts had become entangled with their personal relationships, leading to problems when the relationship ended. Goode (2010) describes this as “sexually transmitted debt” or a debt accrued by one partner for which the other becomes liable. Goode suggests that gender dynamics might play a role in the way debt is acquired as a woman might take it on out of a feeling of obligation to her partner.

Jessica was unemployed and in receipt of job seeker’s allowance of £57 a week. She had taken on a contract for her boyfriend because he had needed a phone. However they had subsequently split up and she was left paying the extra contract.

So I’ve currently got two phones. They called me up Vodafone and they said ‘oh we can offer you another phone’ and made the Sony Experia sound really good and said that we can offer you this phone at £10 a month. At the time my boyfriend needed a phone. I let him have the contract in my name. Then we split up so currently I’ve got two phones [*so she’s paying for two contracts*].

Jessica was not the only woman who had taken on an extra contract for a partner. Alice was a single mother living off benefits of £80 a week and was paying 16% of this income on her mobile phone. She had an iPhone contract of £40 a month but said she had got the contract when she was working, when the contract was more affordable. This demonstrates how the length of contracts can be problematic for people such as the respondents in this study who experienced transitions in their employment and living situations. Jessica revealed during the interview that she was also paying off another contract for her ex-boyfriend.

How much a week do you get to live off?

£80 a week.

So that’s quite a lot of your money is going on the phone?

Yeah about £10 a week but I’m also paying for another contract I had before. Because I gave it

to my ex partner but he wasn't paying for it so I had to cancel the number and now I have to pay the rest of that contract which runs out in May so thats another £15 a month.

Rebecca had taken on a friends extra phone contract when she had gone through this experience.

My friend bought a phone contract out for her ex-boyfriend, They split up and she still have to pay the phone contract and I took it on for her. I was giving her the money for it, I didn't really want it but it all ended up in tears and I gave her the phone back. It all caused so much trouble.

Finally, a story narrated by a Bella, a youth support worker, about a client of hers encapsulates dimensions of different aspects of the issues of easily accessible credit and phone contracts. The young woman in question got a phone contract for a partner, they then split up and she was left with the extra financial burden whilst her ex got the phone. She then got pregnant but is unable to get maternity pay because she is one of many young people who is working on a zero hours contract (see discussion of these contracts in *4.4 Employment*).

She's got a phone contract, her partner who's a male wasn't able to get a phone contract because of his bad credit. She kindly said 'oh I'll get a phone contract for you under my name' and she got the phone contract for him with the agreement that he would give her the money and it would come out of her bank account, her direct debit. So she had two phone contracts in her name. That relationship went sour and they split up and he refused to pay her the money he just went off the radar. She's now stuck with two phone contracts. Its hard to find a 12 month contract these days they're like 18 months, 24 months so she's still got hers and she's paying his contract. She doesn't have his phone.

She's got another year *left [to pay on her ex-boyfriend's contract]*. She uses Wonga loans [*a form of short-term borrowing where an individual borrows a small amount at a very high rate of interest*] to survive. Not to pay off those phone contracts but to eat and to pay her rent sometimes as well. She's just found out that she's pregnant which means that she will be stopping work in about two or three months. She works in care work, which is why she was able to get a contract because she has regular income. She's at risk of getting into debt and she's talking to me about becoming bankrupt. She's 24. She keeps getting a Wonga loan out every month and she's stuck in this trap now. And now she's pregnant and she's stopping work,

and because she was on a zero hours contract at work she's not entitled to maternity leave.

This young woman's story shows how mobile phones can easily become entangled in young people's relationship dynamics and how the credit and financial structures in which these devices are embedded can lead to additional problems. For this young woman gender dynamics are also at play here: she is suffering from the impact of structural inequalities related to being a pregnant young woman working in a low-income job where she is not entitled to maternity leave.

6.3 Buying music

Listening to music was a significant activity for respondents on their phones but these young women have a different relationship with ownership of music than previous generations who might have bought CDs or Vinyl records. For Jordan 19, it was one of her reasons for having a Smartphone, which she revealed when asked if she would go back to using a Featurephone.

Only in dire circumstances. My phone has all my music, My communications, I have to use it to look for work.

Sarah, 16 expressed similar sentiments.

What would you say was the main thing you do on your phone?

Listen to music, text people, take pictures, play games, watching YouTube stuff like that.

The systems by which women manage their consumption of music on their phones is another aspect of the technological 'assemblage' of the phone, discussed in the introduction to this chapter. The DRM (Digital Rights Management) platform used by the iTunes music system used on Apple products prevents the duplication and sharing of music. It is intended to prevent infringement of commercially valuable digital content, such as music and films. Lessig (2004) places this system of copyright and

architectural control in a historical context, showing how its scope and the length of term of copyrighted materials has massively increased in recent years.

This system was a source of frustration to Megan, who had inadvertently spent £60 downloading music and apps but had not been aware of just how much she was spending, as the bill came in monthly rather than after each individual purchase.

It tells you how much it is, but then what happens is they put it all together and take it out in one lump sum.

Would it be better if they could do it as you go?

Yeah instead what they do is they leave it and at the end of the month take the whole lot out.

So was it individual tracks you were buying or whole albums?

Individual tracks.

So did that put you off buying stuff on the app store?

I don't buy a lot of stuff now. I'm very limited with what I buy now.

Megan was particularly annoyed that in some cases she had effectively had to purchase a piece of music twice in order to use it as a ringtone, as the iTunes platform does not permit users to use a piece of music they already own as a ringtone.

The apps weren't the one that cost a lot of money its more the music. Ringtones, stuff like that. Because you have to buy ringtones separate to music.

So even if you buy a track you have to buy it again to make it into a ringtone?

Yeah.

Megan's experience reinforces Samuelson's view that DRM is more than a system for enforcing copyright, and instead is a means for corporations to dictate what people do with digital information. In Megan's case, she did not have the freedom to do what she liked with a piece of music she felt she 'owned'.

These technologies are not really about the management of digital "rights," but rather about management of certain "permissions" to do X, Y, or Z with digital information. (Samuelson, 2003)

In this instance, Megan was not “permitted” by Apple to use a piece of music that she had bought through iTunes as a ringtone; instead she had to buy it twice. This issue of restricted permissions leads Samuelson to view DRM as a system of governance:

A private governance system – in which computer program code regulates which acts users are authorized to do (or not)—than as a “rights” management regime or as a copyright enforcement mechanism. (*ibid.*)

The language Megan was using could be seen to reflect this analysis as she expressed a feeling that she was now effectively trapped by the DRM system into continuing to use Apple products in order to continue to play music she had paid for.

So what else don't you like about your phone?

The updating it and the fact that you can't delete music, once you've bought music on your phone you can't delete it off there, you have to use a computer to delete the music. Its a case of, like, I don't have an option what phone I get because I've spent so much money. You either say goodbye to near enough £2-300 quid that you've spent on it or you stick with it and you carry on getting money down the drain. They've got you hook, line and sinker.

She was considering buying a phone running the Android operating system, as her perception was that music was free on this platform.

It's pretty much the same as an iPhone but you don't have to pay for everything and all the apps and everything are free. You can download music for free.

Zara also had the same perception about her Nokia device and talked about how her use of the Smartphone functionality was limited to playing music.

To be honest you get it for all these apps and then you only really go on the main things... so I didn't actually use many of the apps. Music... lot of music apps.

Could you get free music on Nokia?

Yeah...

Its not like iTunes where you have to like buy their music you can just download MP3s and play them on there?

Yeah thats it.

Victoria had kept her iPhone in part because DRM mechanisms meant she was unable to transfer the music she “owned” from her iPhone to other devices.

And you buy music through iTunes?

Yeah.

And is that one of the reasons you'd keep on having iPhones so you've got all your music?

Probably, because you have to buy your music from there so if you don't have something you can play it on cos its not like you can transfer it to other MP3 players. So it probably is one of the reasons I do stick with it.

Lauren also expressed a similar feeling of frustration at the way that iTunes prevented her from transferring music she supposedly ‘owned’ from her iPhone to other devices. The alternative for her was to use Spotify, a streaming music app which allows the user to play a wide selection of music, but which plays ads on the free version.

And how would you feel about going back to a non-iPhone phone... like any other Smartphone?

The problem with iPhones is that you have to have iTunes to get music and things like that and other phones you can just download it.

And do you find it annoying that you're kind of trapped in that iTunes thing for your music?

Yeah and iTunes is very expensive so if you want music its like £2 something for a song. You can get Spotify thats one of the only good things.

Do you get that with your contract?

No it's a little app where you get all the music thats out.

But they play ads on Spotify?

Yeah it's the only problem with it.

The frustrations expressed by respondents relating to their perceived lack of power and ownership over the music they paid for and played on their phones, could be seen to be negatively affecting their capabilities to “*hold property (both land and movable goods), and having property rights on an equal basis with others*”.

Android phones have their own Google Play music purchase functionality that is equivalent to iTunes, but no respondents talked about buying music using this

function. Instead, some women used apps which were able to circumvent the DRM system. Katie was 20 and a single mum with an iPhone. She used an app to download music from the video site, YouTube.

Do you use your phone for music? All your music?

Yeah on my phone.

Do you buy stuff through iTunes?

No its iTube! It's like a downloading thing from YouTube.

So you don't have to pay for it?

No.

Amanda also used YouTube to play music videos.

What you look at first in the morning?

Check my messages yeah and then I do use Facebook but I don't spend more than three minutes though and then I also use YouTube a lot to look for music videos.

Whilst Jessica used an MP3 player app on her Android phone.

But my first app would be... text... Facebook as its there... or music

Is that an iTunes type thing?

Just an MP3 app

Do you pay for music?

Nah just music that i've collected over the years.

What women such as Katie and Jessica were describing was, in fact, the illegal downloading of music, but it is not seen as illegal by young people, instead this is a social norm. This attitude to downloading music is common amongst young people of their generation, as shown in studies such as that by Altschuller and Benbunan-Fich who found that *“a majority of students believe that it is acceptable to download music from the Internet and commit other forms of piracy”* (Altschuller and Benbunan-Fich, 2009 p.54).

These findings illustrate some of the complexities of the systems by which people purchase, share and listen to music on Smartphones. The simple affordance of

listening to music is part of a complex assemblage of devices, software, financial and legal arrangements. For young people who are insecurely housed and challenged to access connectivity and electrical power this assemblage is easily destabilised. It is possible that this has been exacerbated since the time of fieldwork with the increased popularity of streaming music services such as Apple Music and Spotify, which rely on users being connected to the internet to access cloud-based music services. In their work on the consumption of digital music by homeless young people in the United States Woelfer and Hendry describe how their insecure housing situation impacted on their respondents' relationship to digital materials such as music.

These young people in general do not have a reliable place to hold their digital materials. Impermanence of shelter and instabilities in familial and social relations appears to create a climate of unstable data storage and data migration. In turn, holding onto data so that digital artifacts can be "singularized" is difficult, without stable places for data storage and access. (Woelfer and Hendry, 2011)

Megan theoretically 'owned' a library of music on iTunes but she was unable to use tracks from this as a ringtone on her phone. Amanda expressed some regret about the fact that she did not own any "hardcopies", as she described them, of her music, but set this against the experience of using Spotify, which gave her almost instant access to any song she wanted.

I use Spotify a lot it is okay.

[I talk about the fact that I own records that I've had since I was a teenager]

It is crazy I do miss the fact that you can't have like hardcopies of music, I haven't bought a CD in ages. But it is just easy you can have a song in like a minute you don't have to go and buy it.

6.4 Mobile phone companies

The marketing and pricing information offered by mobile phone companies often confused the young women in this study. The choice of mobile phone contracts

offering a 'free' handset, the complexity of these contracts and the various ways they were able to purchase top-up credit on PAYG phones presented problems for respondents. This market complexity and opacity was implicitly acknowledged in the official advice on mobile phone contracts provided by the UK telecoms regulator Ofcom on their website.

With millions of phone deals available today, it can be very confusing working out which offers you the best value for money. For example, having a monthly allowance of thousands of free minutes and texts may seem like a good idea at the time, but if you don't use them you're effectively wasting money. (Ofcom, 2015b)

This confusion was apparent in the narratives of some young women when they talked about their interactions with mobile phone companies, particularly in relation to going over their allowances for calls or data. For example Jessica, as detailed below, was finding it difficult to find out how much her operator was charging her for calls when she went over her allowance. As fieldwork progressed this theme increased in significance as more stories emerged about problems with mobile operators, as recorded in fieldnotes.

Research diary extract

As the fieldwork has progressed I can hear in my interviews a more critical tone coming out about mobile operators. When i started out I didn't have that critical sense that operators were ripping off young people, debt and problems with contacts soon emerged as an important theme. I've just transcribed an interview I did in early summer 2014 and by this point I'm going in harder with my questions about credit and mobile operators.

The fact that many people in the UK might be wasting money on contracts which give them more minutes or data than they actually use suggests that this confusion is fairly widespread and not limited to the respondents in this study. Research from 2012 by Ofcom-accredited price comparison service Billmonitor looked at almost 70,000 anonymised mobile phone bills in the UK. This research showed that as many as 11.7

million users might have contracts that at least three times larger than they need and these consumers might be wasting on average £179 a year (Billmonitor, 2012). Some women were fortunate in that their parents were able to pay off their debts when they inadvertently went over their call or data limits, as in the case of Sarah, 16 who was still living in the family home.

And has your mum ever given you a bollocking [telling off] because you've gone over?

Yes I got a £200 one once by accident and I didn't mean to and my mum had to pay it and I got in lots of trouble and had to work it off.

However an intermediary working with these young women provided a different perspective on this issue: talking about how a breakdown in a relationship with parents can lead to contracts being broken.

I also think maybe their parents had the contract and the relationship breaks down and the parent stops the contract and they get into further debt.

For other women in this study who were insecurely housed and living away from their family, the impacts of negative engagements with mobile companies could be seen to be impacting on their capabilities. This was the case for Jessica who was having problems using her phone to find work because she was going over her call allowances and was not sure whether she could afford the extra credit she needed to pay for the calls. The affordances of an app she was using to stay within her call allowances were causing her problems. She was being charged for calls on top of her allowance, as the app had not updated regularly enough for her to keep track of the calls she was making.

I've got an app that I go onto [to track minutes] and it will show me how many minutes I've used, data, texts, but it doesn't update itself. It only updates itself every 24 hours so then I might go over by quite a bit in 24 hours. If it's a busy day when I'm needing to make a lot of calls. As well I didn't know that it was going over. I didn't realise how much it was over. I didn't realise how much they are charging me per minute when I went over.

How much are they charging you?

I don't know still. I haven't looked into it. But it seems to be a lot.

Jessica described herself as having been 'swindled' into a mobile phone contract because she had wanted a laptop.

And have you got your own computer?

Yes, a laptop came through with my contract. I got a contract phone and my laptop came free with it.

You got a free laptop with it?

Well... not free its on a two year contract.

So you pay for them both at the same time?

Yeah its sort of what swindled me into getting the Smartphone.

Jessica's description of having been "swindled" into getting her Smartphone contract out of a desire for a laptop suggests that she felt somehow powerless in her relationship with the mobile company that was offering the contract.

Lauren, 17, was having problems with her mobile operator relating to finding out how many free text messages were included in her PAYG deal, and also because she was apparently being charged £1 every time she used the Internet on her phone. She was reliant on this mobile Internet access as she was living in temporary overnight accommodation after arguments in the family home meant she had to move out.

It said I had 2,900 texts and then I used 100 texts and it said I'm out of texts!

So is there an app on there which tells you how many texts you've got?

Its just a little number you type in.

Are you on contract at the moment?

No, pay as you go. I should really get a contract!

And how much are you spending a week?

This week [*it's Wednesday*] I've spent £20 on it cos O2's been messing up its been taking credit away and it takes a pound for every time I go on the Internet! And I haven't gone on the Internet on it! Cos it didn't say I had Internet [*presumably the 3G indicator*] so its taking money away for the Internet.

For Lauren, who was on a low income and Jessica, who was unemployed and on benefits these extra charges would undoubtedly have had an impact on their capabilities by using up the money they had available to spend on necessities such as food and housing. Amy, a housing advisor working with respondents spoke about the opacity of the language used in mobile phone contracts and how young people misinterpret their allowances.

I think it's also about the misinterpretations from some of the contracts around what they can offer. I think sometimes they think they've got loads of data stuff and they don't realise so they do a month of going on Facebook because they [think] they've got no data charges and they've got a bill for £200.

Some women reported getting unexpectedly high bills. This was an experience shared by 5% of mobile contract customers in the UK 2013-14 according to Ofcom research (Ofcom, 2015a). For example Zara complained about the fact that she had been charged a £10 supplement on top of her £38 a month contract for streaming video.

What do you think about the contracts?

I think that if your tariff is £38 a month then it should be £38 a month..When it says unlimited Internet but you're getting charged an extra tenner for going over and thats sposed to be unlimited.

Is that what would happen?

Yeah sometimes... I think its false advertisement.

Zara's boyfriend had been given a bill for £170 for using 4G data when he was only entitled to unlimited 3G data. These terms had been included in the 'small print' of his contract but he was not aware of it.

As detailed in 6.2 *Contracts and bad credit*, mobile phone companies were willing to give contracts to low-income young people with little job security. One respondent, Jordan was aware of the persistence of the marketing activities of these companies.

Jordan's perception was that these companies were keen to get her money to earn interest on it.

They're very persistent, it is anything where they can get you to pay in advance so the company has got the money.

The feeling that Lauren, quoted above, describes of being powerless in the face of confusing information from her mobile operator is an instance of what Best and Tozer (2013) see as a manifestation of the power dynamics underlying the use of digital devices such as mobile phones and the systems which support their use.

Power dynamics underlie the continuum of architectural control that underwrites digital devices which subject the user to varying degrees of control, from overt control to attempts to accommodate for perceived user ignorance or ineptitude. (2013, p.402)

In this instance power dynamics underlie these women's engagements with the 'assemblage' of mobile phone operators, the legal framework of their contracts and the device itself, leaving them feeling powerless and confused when they are overcharged or sold contracts they ultimately cannot afford. By understanding this engagement we might see how their capabilities might be impacted by these engagements. For example, we see this in Lauren's feeling that her operator, O2 had been "*messing up*" by overcharging her. She used language to suggest that she was somehow powerless in her relationship with the operator, describing herself as "*giving up*" in her attempts to get clear information. She had called various company contact numbers in an effort to find out how many SMS messages she had on her allowance but had been unable to get a consistent answer.

Do you find it hard to get hold of them - when something like this happens do you find it hard to get a straight answer from O2 about money you're spending?

Yeah cos if I called the bolt-on number they'd say I had 2900 texts, [*then I*] call a different number it'd say I had 600, called a different number it said I had 100 and I was just like... ahh I give up now!

6.5 Discussion

People will go and get their phone because they need it. It is not a social thing. Sometimes people need it for work or childcare or whatever.

This quote from earlier in this chapter shows Courtney's mother perception that phones were not a luxury item but a necessity. But, as we have seen, the women in this study were paying what might be seen as a 'poverty premium' to maintain their ability to use their phone to communicate. We also saw how this access was interrupted for the 40% of the women who experienced financial problems paying for their phones. For these women, the financial maintenance affordance of the phone was undoubtedly impacting on their capabilities to lead lives they valued: both by interrupting their ability to communicate and by using up income they could have been spending on other things such as housing or food. For the women who were paying for contracts for ex partners, this affordance was entangled with negative gender relationships. For example Bella, the youth support worker who was supporting a pregnant young woman who was paying her ex partner's bill described him as '*using her*'.

And in terms of the boyfriend who went off with a new iPhone, and no responsibility for contracts and someone else paying his bill? He's long gone. And our job now is to empower her to say no and to be able to protect herself and be more wary... because it seems to be that he was using her.

In a positive sense we saw in this chapter the importance of the affordance of audio playback to the women in this study to listen to music. This experience could be seen to be contributing to Nussbaum's central capability of "*enjoying recreational activities*" and "*Being able to use imagination and thought in connection with experiencing and producing works and events of one's own choice, religious, literary, musical, and so forth.*" (2003, p.42). However it could be argued that these women's sense of material control over their own property was complicated in the case of music

purchased through the iTunes software since they were not able to use this music in the way they wanted. Use of this software had also led them to a perception that they were now limited to using Apple products in order to continue to access music they legally 'owned'. In a broader sense, we have seen in this chapter how women were experiencing challenges navigating the complex assemblage of mobile phone operators, credit scoring and allowances, and in some instances finding themselves without access to communication networks because of these challenges. Best and Tozer's (2013) analysis of the power dynamics and control in these assemblages sees users subject to varying degrees of control, and in that sense these issues could be seen as compromising Nussbaum's central capability of "*Being able to hold property (both land and movable goods), and having property rights on an equal basis with others*". (2003, p.42).

7 MAINTENANCE AFFORDANCES 2: BATTERY LIFE, BROKEN SCREENS AND DISRUPTED CONNECTIONS

Does the phone help you in a practical way?

Yes it keeps me in contact with the world.

Is it an important way of keeping yourself safe at the moment?

Yes.

So how long has it been without charge?

About two days... I'm going mental now.

At the time of interview, Rachel was unemployed and living in a tent in a graveyard on the outskirts of Brighton. She had been brought up in Brighton but was no longer in contact with her family so was unable to access support from them. Rachel relied on her Smartphone to keep in contact with her friends at a time when she was very vulnerable. However she was finding it difficult to find places to charge her phone and, at the time of the interview, it had been without charge for two days. She was also unable to charge her phone at the drop-in advice centre where the interview was taking place, as this facility was not available for clients.

This is the second of two chapters looking at the maintenance affordances of mobile phones and explores the various ways phones need maintaining to stay connected: in particular power, access to signal, wifi or data connection and the resources to repair it if it breaks with the aim of answering RQ3.

RQ3. How do the maintenance affordances of mobile phones affect the capabilities of 16-24 year old socially excluded women?

This chapter looks at the maintenance challenges of mobile phones in the lives of respondents. As we see in work such as Schaub *et al.*'s (2014) these issues are not a phenomenon experienced uniquely by the women in this study, but the cost of

7 Maintenance affordances 2: battery life, broken screens and disrupted connections

maintenance and the experiences of ‘normalised disconnection’ could be seen to have a particular effect on their capabilities to live lives they valued. For the young women in this study there was a relationship between the need to maintain the phone and their capabilities. For example in Rachel’s case the capability of “*Bodily Integrity. Being able to move freely from place to place; to be secure against violent assault*” (Nussbaum, 2003, p.42) was negatively impacted by the fact that, while she was living in a tent, she was not able to charge her phone to stay safe and connected with her support network. In this chapter we will explore the various ways in which the women in this study were challenged by what Best sees as a user’s responsibility to respond to their devices’ ‘needs’.

As agents themselves, technologies come equipped with their own set of needs. They need to keep entropy at bay, and it is a user who must deal with related requirements for energy and for repair. (Best, 2009 p.1034)

These challenges include the fact that respondent’s phones seemed to break frequently, their battery life was poor and they were not always able to get a mobile phone signal.

7.1 Human-battery interactions and maintenance affordances

From a theoretical perspective it is possible to understand these issues from the perspective of both HCI literature on ‘human-battery interactions’ and maintenance affordances and from the more sociological perspective of mobile communications studies. In the HCI literature Kaptelinin and Nardi define maintenance affordances as features that enable people to maintain or fix a piece of technology: “*appropriate affordances for carrying out maintenance routines and troubleshooting*” (2012). They cite the back cover removal slot on a Smartphone as one of these affordances. This is useful in that it shows how the materiality of the phone provides a means for an

individual to carry out limited repairs on the device. But we shall see below how respondents perceived that modern Smartphones are both fragile and challenging to repair, so that they were not able to take full advantage of these affordances. Schaub *et al.* (2014) carried out user studies looking at the impact of broken Smartphone screens on usability and researching the strategies people adopt to manage this damage. These strategies are explored further in 7.2 *Broken screens and fragile devices*.

Rahmati (Rahmati *et al.*, 2007; Rahmati and Zhong, 2009) used qualitative research to show how consumers typically under-utilise power-saving settings and battery energy. Whilst this research is valuable in that it shows how the maintenance challenges faced by the women in this study are generalisable to the broader population, this literature typically does not seek to address the consequences of these issues for different social groups.

In one exception, Gonzales (2014) explores the consequences of the maintenance and connection issues in her work on mobile phone use in low-income communities in the urban United States. She looks at the implications for individuals of what she describes as “*technology maintenance*”, referring both to the need to repair phones and also the instability of the connection. For Gonzales, the impact of this maintenance is that intermittent disconnection becomes normalised in low-income communities. She found that this normalised disconnection in turn impacts on their capabilities by disrupting their access to healthcare and has the potential to increase health inequalities.

By frequently relying on outdated and pay-as-you-go technology, people in poverty are creating ways to access technology that have built-in periods of disruption, which could have serious long-term implications for the health and well-being of low-income populations. (2014, p.242)

7.2 **Battery life**

Why do you hate your phone?

Mainly because of the battery.

Morgan's response to the question of why she hated her phone was not unusual in this study: for many respondents poor battery life was one of the issues they raised when asked what they hated about their phone. This is also possibly related to the fact that, for Rachel and the other ten homeless women in this study, finding a place to charge their phones was difficult.

Battery problems are in-part caused by the fact that the speed of improvements in battery capacity in Smartphones in recent years has not matched the more rapid pace of development in the phones themselves, so there is a disjunction between users demands of the phone and its battery life. As Rahmati and Zhong observe: "*Battery capacity, in terms of volumetric or gravimetric energy density, improves at a much slower pace than computing capacity*" (2009, p.466). This is shown by the experience of respondents who reported that the battery life of their phones was less than a day. In contrast, two of the Featurephone users in this study, Kayla and Rebecca reported a battery life of three to four days. For example, Jessica was 21 and homeless and complained about her phone's very poor battery life.

What's the battery life like?

Crap.

Like a day?

Not even that, if you're texting your friend for about an hour it goes down to 50%. And I don't actually have a charger for it myself.

Tanya 17, was also homeless. She had found it necessary to pay a pound in central Brighton to get her phone charged for half an hour because the battery life was so

poor. Zara had also paid to get her phone charged; she related her need to charge the phone regularly to her heavy use of the device, and the variety of functions the phone served for her.

Would it [battery] go in a day? Half a day?

A day easily but that's because of all of the stuff that you use on there.

Did you ever pay to go and get it charged in town?

We have done yeah, like a pound or something.

Did it annoy you that you had to do that?

It is quite annoying as you pay enough for the phone.

Emma complained about the battery life on her iPhone, saying that it had gone down to half way already that day at the time of the interview at 10.30am. The field notes record an observation that her poor battery life may have been linked to her compulsive checking of her phone as this would have used a lot of battery, and this might be related to her mental state, as she seemed anxious at the time of the interview.

Research diary extract

We talk about battery life and she says her charge is really bad. She has charged it fully that morning and it is gone down to halfway already even though it was only about 1030 in the morning when I interviewed her. She was fiddling with her phone constantly - just locking and unlocking it almost compulsively. When I asked her about this she says she's looking at the time and checking on her battery life. She was talking about how rubbish her battery life was and she even mentioned that she thought it might be because of this fiddling about. She didn't seem like she was in a good place.

Short life was not the only problem with batteries: Megan's perception was that the battery life on her phone had declined.

I've known my phone to go from fully charged to completely dead within two hours, watching films, playing music.

Has the battery life gone down a lot since you got it?

Yeah it's probably halved.

Megan's experience is related to the fact that the batteries used in the generation of Smartphones used by women in this study start declining immediately after manufacture. This is caused by changes in the chemical composition of batteries in recent years.

Most mobile phones employ rechargeable Lithium-ion (Li-ion) or Lithium-ion polymer (Li-poly) batteries, which enjoy improvements over previous generations, such as nickel-cadmium (NiCd) and nickel metal hydride (NiMH)... An important drawback of Li-ion and Li-poly batteries is that they start aging immediately after manufacture, even if not used. Battery lifetime becomes noticeably shorter after several months of usage, and this was reported by participants in our four-month field trial. (Rahmati and Zhong, 2009 p.466)

In this study by Rahamati and Zhong the authors found that users were not making effective use of the power saving settings on their phones that might have increased the battery life. Other work by Rahmati *et al.* links higher overall levels of Smartphone use, and impact on battery use with socio-economic status. They conducted a longitudinal study comparing iPhone usage amongst two groups of college students from different socio-economic backgrounds and found that users with lower socio-economic status had much higher overall usage of their phones.

On one hand, the iPhone offered the lowest SES users access to technology for information and entertainment that was used very frequently, much more than others at higher SES levels. This suggests the device provided useful capabilities. On the other hand, the prevalent complaints about the battery life led to poor perceived usability. (Rahmati *et al.*, 2012)

Given that more than half of respondents in this study had no computer or broadband access at home, it is likely that they also had high overall usage of their phones as they would be reliant on their them for Internet access.

By relating complaints about battery life to a broader sense of "*poor perceived usability*" Rahmati *et al.*'s study demonstrates how this particular maintenance

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affordance might have impacted on the capabilities of women in this study. Firstly by interrupting their connectivity when their batteries run out and secondly the cost burden of payment for charging phones.

7.3 Broken screens and fragile devices

What was the first phone you had?

Old Nokias... they seemed to last me well. This phone's got a screen crack, that would never happen with the Nokia's they seemed to be indestructible. That's one thing that annoys me about a Smartphone. I am a bit careless when it comes to technology

I show her my broken phone and say 'I share your pain'.

In this quote Jessica is comparing the resilience and 'indestructability' of her old Nokia Featurephone with the fragility of her Smartphone. Just as with battery use, complaints about broken screens and damaged phones were a significant theme. Respondents used various strategies to deal with these issues, which are explored below: continuing to use damaged devices or using contracts and insurance as a way to upgrade phones.

During fieldwork the screen on my own phone broke after only a year of use and this served as a prompt for discussions about broken phones during interviews as I was using the device to record the interviews. It is possible that this increased my awareness of the vulnerabilities of touchscreen Smartphones and made me more likely to ask questions which could be seen as loaded. For example, in the transcript cited below the question asked is: "*Does it annoy you that they break?*" rather than "*How do feel about the fact that your phone breaks?*". However this is grounded in the reality of the fact that Smartphones do break frequently: a survey of more than 2,500 people from 2014 by a UK mobile insurance company (Big Idea Media Ltd., 2013) found that 37% of devices suffered some sort of damage in the first three months of

7 Maintenance affordances 2: battery life, broken screens and disrupted connections use. Women in this study would typically carry on using a phone despite this damage. This is in line with a study by Schaub *et al.* (2014) of 95 Smartphone owners with damaged phones. They report that 88% of their participants continued to use their damaged Smartphone for at least three months and 32% planned to use it for another year or more, mainly due to high repair and replacement costs. 42% of respondents in Schaub's study were on a low or very low income (The majority (22.1%) reported a low income (500-1.500 USD/month), 20% a very low income (under 500 USD/month). Therefore it is possible that this practice of using damaged phones is related to not having the income to repair non-critical damage such as cracked screens.

7.3.1 Costs of phone repair

These high costs were perceived as a financial burden for women such as Amanda who was homeless and working part time as a waitress. She described her phone in human terms as 'temperamental'; suggesting both the intimacy of her relationship with the device and her frustrations with it.

What do you hate about your phone?

Oh I hate that everyone relies on their phone and you have to charge them and they're so temperamental. Like I dropped it this morning and now it is not working.

What will you do in situations like that?

Leave it, maybe get it fixed.

Do you find it expensive to get it fixed?

Yes I find phones expensive generally.

This was also the case for Alice, 21. She was unable to renew her mobile phone repair insurance, as she could not afford it.

So did they try and sign you up for any insurance?

I was on insurance with my iPhone and my BlackBerry but I took it off because I couldn't afford it. I wanted it because I broke the Blackberry because I broke the charger bit of it.

Alice had reached an accommodation with her broken phone which she was now unable to turn off – saying “*its not too much of a problem... its only a lock button*”.

She was deferring paying to get her phone mended, as she could not afford it at the time of the interview.

So what would you do to get it mended?

I think I'd have to pay a lot for it, but at the moment I don't exactly need it because it locks automatically after a minute... it's only a lock button. I wouldn't know how to turn my phone off completely.

In their study Schaub *et al.* report a similar trade off in which phone damage and challenges to user interaction are balanced against the high cost of repair.

Both survey and interview results indicate that even heavily damaged Smartphones are continued to be used for multiple months; phones with less severe damage potentially for years. Main reasons for continued use are high repair or replacement costs, which are balanced against the severity of the damage. (Schaub *et al.*, 2014)

Jessica, quoted above, uses language that suggests that she blames herself for damage to her phone with her use of the phrase “*I am a bit careless when it comes to technology*”. Melissa echoed Jessica’s view – expressed in the quote at the start of this section – that Smartphones with touchscreens were more fragile than older Featurephones.

So how often do you change your phone, is it something you change a lot?

No I get an update every two years. I've broken a few phones.

How have you broken them - just by dropping them?

Yeah.

Do you think they break quite easily?

Yeah.

Does it annoy you that they break?

With touchscreens yeah.

Do you think they're more fragile than older phones?

Yeah.

Elizabeth thought that the fact that she had a lot of music and pictures on her phone might be the cause of its sluggish performance.

7 Maintenance affordances 2: battery life, broken screens and disrupted connections

Does it crash on you?

No it's quite good.

Is it fast?

No, slow... I think its because I've got too much stuff on my phone...

Have you got a lot of music on there?

I've got music and I've got pictures... things like that... but its not fast at all..

They just start to slow down after a while then things like that happen [I show her my broken phone back].

Mines like it as well, all scratches and dents and stuff on it. If it crashes I turn it all off take the battery out, put it back in. Sometimes it works, sometimes it doesn't.

Elizabeth's perception that she had "*too much stuff on my phone*" could be related to the scenario of heavy phone use by people from lower socio-economic backgrounds described in Rahmati *et al's* (2012) work in the previous section. In the case of the respondents in this study this connects with their lack of other forms of access to the Internet as discussed in 2.5 *Social and digital exclusion*. Since 16 women in this study – more than 50% – did not have their own computer it is likely that they would be making heavier use of their phones than those that had access to a computer.

Megan used the phone's breakages to justify the potential purchase of a new phone, as she thought it might cost as much as £160 to repair her phone.

My phone is broken, on the back my phone is cracked. The problem is, to get it fixed, its 50/50 chance whether they break the phone, there's a chance that your phone will never be the same again. The thing with the Samsung Galaxy if you break it on the screen and get the screen fixed if they damage one of the bulbs instead of being 40 quid its 160. So you might as well get a new phone.

Other women were also using contracts and insurance packages as a strategy for dealing with the fragility of their phones. Madison spoke about how she did not like using broken phones and got bored of phones, suggesting she would use a contract as a means to ensure she could upgrade regularly.

I'd rather have a new phone as well. I get bored of phones quickly. They start breaking or scratching. Then I want a new phone and if I'm on contract I know I can.

Courtney had insurance for her phone and saw this as an effective strategy for dealing with the fragility of the device, which her baby had smashed several times when she was playing with it. Courtney balanced the cost of getting the screen replaced at approximately £90-100 against the cost of getting a new phone on her insurance at £60.

Does she [baby] play with your phone a lot - grab it off you?

Yep! Smashed a few too!

That's an expensive business!

Obviously 'cos they're iPhones they're like £120 to replace so I've just been getting rid of them and getting a new one.

What, off your insurance?

Yeah, you have to pay something like £90 to £100 to get your screen fixed or you can pay £60 and just say you've lost your handset and get a new one so I'd rather pay £60 and get a brand new handset.

Graham and Thrift see this cycle of contract and upgrade as part of a pattern of commodification and acquisition of technology.

Many increasingly sophisticated commodities are actually made to be replaced and disposed of through accelerating cycles of acquisition and almost immediate disposal. (Graham and Thrift, 2007, p.18)

They relate experiences such as Megans' phone breakage to deliberate design and manufacture decisions in digital technologies. Graham and Thrift describe contemporary electronic devices as being designed to be expensive to repair so a consumer will feel pressured into replacing the device.

Many modern commodities are deliberately designed so that the possibilities of maintenance and repair are foreclosed. They lack any kind of transparency so that their functioning cannot be restored if they break down. (2007 p.18)

However it should be noted that not all respondents had to pay to maintain their phones. One woman, Sarah, was able to exploit her devices' maintenance affordances (Kaptelinin and Nardi, 2012) to repair her phone. She talked about how she had

repaired her phone after looking up a tutorial on YouTube, however she was the only respondent who talked about doing this.

So what do you hate about it?

Sometimes it's slow and it freezes

Can you fix it when things like that happen?

I'd take it to a phone shop.

Would you fiddle with it yourself at all?

Yeah I probably could cos I could look it up on YouTube for a tutorial for when your Samsung Galaxy S3 freezes.

And would you feel confident about that - pulling it apart?

Yeah yeah.

Have you done that before?

Yeah I have done that before. I broke my iPhone screen and I had to look for a tutorial on YouTube.

7.3.2 Mobile phones as gendered consumer objects

Women's relationship to the maintenance and repair of their mobile phones can be examined from the perspective of women's gendered engagement with technology. For example, in a study of the production of gendered identity in adult women gamers and female teenage participants in digital media workshops, Thornham and McFarlane found that women sought to distance themselves from technological competence: making claims of disinterest, exclusion and "*self-deprecating performances of inability*" (2011 p.82).

Gender emerges here specifically in relation to technology as a complex enabler of a carefully constructed engagement, and as a distancing device facilitating a claim of, and towards, disinterest. (*ibid.* p.65)

Walkerdine suggests that women perform a version of female identity in relation to technology which reflects a "*habitual 'feminine' position of incompetence*" (2006, p.526). This lack of confidence and 'distancing' can be seen in Hannah's complaints about her phone freezing: she did not attempt to repair it and instead reports being

wary of ‘touching’ it. This seemed to be interrupting her attempts to use her phone for instrumental purposes such as looking for housing.

I have been using it recently to try and find private rented housing, places like Gumtree and Friday Ad, [*but*] to be honest I don’t really know how to use it.

What do you find difficult about it?

They change the software all the time, so things all look different. Or they move and I don’t know where they’ve gone or it freezes.

So what do you do when it freezes?

I leave it, I think I better not touch it.

Lauren complained about feeling ‘menaced’ by her iPhone when she experienced problems with the software, suggesting a lack of confidence in her ability to address these problems.

Do you ever have problems getting online when you need to?

Yeah the Internet... especially on iPhones it plays up quite a bit, you can load it and then it will just come straight back to the home screen. It’s a bit menacing sometimes.

This also relates to the role of the mobile phone, and particularly the iPhone, as a significant consumer object in the lives of respondents. So, for example, Alexis described how her

Do iPhones tend to be what your friends have as well?

Yeah...when a new phone comes out everyone wants that.

So, for example, Nicole valued her white iPhone for its appearance and status as a desirable consumer object.

What do you love about your phone?

The colour and the make.

So it’s like a fashion thing like a handbag or jewellery?

Yeah.

When asked if she would buy a low cost phone from the budget supermarket Aldi, Nicole replied that she would be embarrassed to use it; to the extent that she would not answer it.

How would you feel about using an Aldi Smartphone?

No way.

Would you be embarrassed?

Yeah I just wouldn't answer my phone.

Sarah said that the look of the device was “*definitely*” important in her choice of the Samsung Galaxy phone and also reported that she would be too embarrassed to use a cheap phone.

How would you feel about using a cheaper Smartphone?

I'd get cringed out it'd be embarrassing.

In Shade's work on the 'genderscripting' of mobile phones she suggests that they are marketed in such a way as to represent “*an extension of one's stylistic sensibility*” which “*reinforces femininity and hetero-normativity*” (2007, p.186). In her quote Nicole could be seen to be 'extending her stylistic sensibility' by refusing to even answer a budget Smartphone. The budget Smartphone might have been a more financially appropriate choice for Nicole, since she was unemployed and pregnant and had housing problems. Instead she had chosen a more expensive device, which would cost her £32 a month but which may be seen to 'reinforce her femininity'. McRobbie sees such consumer choices as a critical part of the formation of the young women's identity.

There has been a long history of commercial culture directing itself towards the site of girlhood. However, my claim here is that this force is now accelerated and expanded with the effect that commercial values now occupy a critical place in the formation of the categories of youthful femininity. (2008, p.532)

Another gendered aspect to women's relationship with the physicality of their phones was the size of the device: as mobile phones get larger many women find that their hands are too small to hold them comfortably. Ashley complained about her Samsung

S4 being too large for her hand, although it is unclear whether the size of her phone was related to the fact that she had dropped her phone.

Whats the thing you like least about it?

Well firstly it's a bit too big for my hand! You have to be really careful because my phone dropped a couple of times and it got damaged.

7.3.3 Discussion

As we can see, the women in this study had developed a variety of strategies to deal with their frequent experiences of damage to their mobile phones. Having grown up with mobile phones they contrasted their experiences with vulnerable touchscreen phones with the 'old Nokias' they had as younger teenagers. Whilst the experience of broken phones is universal, the financial impact of expensive repairs and insurance is likely to have had a greater impact on poorer young women such as those in this study. We also saw how women's gendered identity impacted on the maintenance affordances of the phone as it potentially prevented them from having the confidence to attempt to repair their phones. Finally, we saw above how young women's consumer choices might have influenced by the consumer culture around mobile phone fashion, which Shade (2007) suggests may be gendered.

7.4 Broken signals: strategies for staying in contact

Can people still ring you?

People can't ring me but I go sometimes to this hair salon and there's this shop... basically they do free wifi so I go and sit there and use that.

Sandrine's experiences were explored in 6.2 *Contracts and bad credit*. She had failed to keep up payments on her iPhone contract owing to fluctuations in her income from her low-paid job at the local hospital. In order to keep in contact with family and friends she had to go and sit in a hair salon, which was next door to a business with

un-secured wifi and use this connection. Sandrine's experience illustrates the final type of maintenance under discussion in this chapter – the need to maintain signal and connectivity either through wifi or mobile signal.

In her work on mobile use in low-income communities in the United States, Gonzales points out how strategies such as Sandrine's for accessing connectivity were typical of these communities, but had not been the subject of empirical study outside developing countries.

These indicators of *technology maintenance* have primarily been observed outside of the United States to-date. Scholars have paid very little attention to these same practices by marginalized citizens in a wealthy and wired nation, such as the United States. (Gonzales *et al.*, 2014 p.4)

Alexis was 19 and on maternity leave from her job as a carer at the time she was interviewed. She was living with her four-month-old baby in damp accommodation and did not have a computer or Internet access at home. She complained about her poor mobile signal, as it meant that she missed calls and people had to leave messages. Alexis had developed a strategy to minimise the cost of accessing voicemail messages, which meant she would only access them when there were multiple messages.

I'm on Vodafone so its got a rubbish signal...when people try and get hold of you its like your phones off when its not. And then you have to pay to access your voicemail.

Do you ever find the cost of it difficult?

I just tend to leave it until there's like 12 messages.

Alexis had other technology maintenance strategies that included not using mobile data at all and instead only going online on her phone at her partner's house where she could use his wifi connection.

So how much roughly do you spend on topups?

£5 a week

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And has that got all your mobile data as well?

I only get free weekends.

So do you have to spend extra to get mobile data?

Yeah I have to pay an extra £5 a month on top if I want to do that but I don't do that.

So you don't use mobile data at all?

I only use it when I'm at my partner's house because he's got Internet.

Lauren was homeless and did not have a computer, so she relied on mobile data connection on her phone to get online. However she was challenged by the patchy mobile signal she experienced in Brighton.

Sometimes the 3G don't work and things like that.

It can be quite slow?

Yeah like on the seafront [on the beach in Brighton] I get no 3G at all.

Several respondents talked about using coffee shops with free wifi to get online when they were unable to get money for credit. Elizabeth had lost her job and was finding it difficult to find the money to top up her phone.

So when you haven't got credit do you know places with wifi?

Yeah.

Where are they?

Mostly Costa or Starbucks [coffee shops with free wifi].

However the popularity of these venues as places to access free wifi had an impact on the strength of the signal. Jordan, 19 complained about the slow wifi in Starbucks, which she blamed on the volume of people using it. Other women experienced technical problems using publicly accessible wifi. Samantha was 17 and was arguing with her family so had to move out of the family home. She also relied on public wifi, but complained that this had caused her phone to freeze.

It keeps mucking up, freezing my phone... when I use it in cafe or the library then it freezes my phone.

Other women shared communications costs with friends when they were unable to get credit. In his work on mobile use in the developing world Donner talks about practices such as ‘beeping’ (calling someone and then hanging up before they answer to signal that you want to communicate with them) as a means for low-income mobile users to share costs between friends and families:

A simple strategy to redistribute telecommunications costs and as a form of code which, intentionally or not, serves to strengthen relationships and reinforce social norms. (Donner, 2007 p.17)

The women in this study discussed similar strategies. Morgan complained about how other people had used her phone when she had a contract as they did not have credit.

And other people always used MY phone cos they never had credit so they were always using my phone. I always had to know where it was...remember which person had it.

This suggests that information about credit status might be shared amongst friends. Jordan talked about how she would let people know when she did not have enough money to top up the phone, so they would know that they needed to call her rather than expecting her to call. Lauren’s friends knew when she had a lot of free texts and would change their communication patterns accordingly.

You still text a lot?

I text **so** much.

How many texts do you send a day?

Well when I had 2900 texts I went through that in two weeks. Its cos my friends when they know I've got credit they just don't stop. It's constant texting.

This redistribution of communications costs is a way for these young women to stay in contact with their networks of close friends and immediate family. The role of mobile phones in supporting these networks is discussed in depth in the next chapter on communicative affordances.

In contrast to the lack of confidence in maintaining the physicality of their phones and dealing with mobile phone companies, these women were resourceful and innovative in their strategies for staying in touch and online: sharing credit, knowing where to get free wifi or keeping costs down by accessing multiple voicemails. However this intermittent disconnection would have undoubtedly impacted on their capabilities. For example Sandrine, whose experiences were described above, was only able to contact her family overseas when she was able to access the free wifi she had found. This could be seen to impact on her capability to *“to have attachments to things and people outside ourselves; to love those who love and care for us”*.

7.5 Intermittent disconnection and capabilities

This chapter looked at the ways in which the need to respond to the ‘needs’ of mobile phones – battery life, repair and signal – had impacted on the lives and capabilities of the women in this study. We have seen how their socio-economic circumstances meant they had to develop low-cost or free strategies to deal with these issues, such as accessing free wifi or sharing credit. We also saw how women’s gendered identity might have led to a lack of confidence in addressing problems with broken phones and operating systems, but also meant that some women felt pressurised into choosing iPhones as they were seen as desirable consumer items.

HCI studies such as those by Rahmati *et al.* (2007) and Schaub *et al.* (2014) show us that issues of poor battery life and cracked screens are typical experiences for Smartphone users. But for women in this study these problems might have a greater negative effect on their capabilities than comparable groups of higher-income women. In the example of Rachel, cited earlier, who was living in a tent; she felt that she

needed the phone to stay safe so its battery life was a critical issue for her. In addition the experiences described above show how low-income women were less likely to have money to repair broken phones. Gonzales describes the way in which low income people have to deal with these breaks in signal and connection as signifying a higher degree of instability: “*intermittent disconnection leading to dependably instability*” (2014, p.234) and suggests that this demonstrates a divide in mobile access between rich and poor. It is illuminating to relate these maintenance issues to the digital divide, the unequal access to technology and connectivity that can impact on an individual’s capabilities and wellbeing, which was discussed earlier.

Technology maintenance proposes that as the poor increasingly have initial in-home and public access to technology, the digital divide will begin to center on differences in the ability to maintain that access. (Gonzales *et al.*, 2014 p.1036)

Gonzales relates technology maintenance to the need to see material access to technology as a multi-dimensional construct, relating it to van Dijk’s theorisation of digital divides in motivation, physical access, skills and usage (2013). This is a means to ‘re-materialise’ discussions about digital divides, a process that is vital when dealing with the material complexity and fragility of Smartphones – their broken screens and battery life.

This chapter showed how the need to maintain, power, connect and charge phones led some respondents having only intermittent voice and data connections on their mobile phones. Yet these issues of maintenance cannot be considered in isolation from the structural issues of poverty and homelessness faced by respondents in this study. For example, Rachel’s homelessness directly impacted on her ability to charge her phone. The fact that Zara had no computer led her to make heavy use of her phone, which in turn meant that her battery life was shorter. In Zara’s case this could even be seen to

7 Maintenance affordances 2: battery life, broken screens and disrupted connections exacerbating the poverty that she was experiencing, as she had had to pay to charge her phone. Other women were deferring paying to get their phones mended because they could not afford it.

These undoubtedly impacted on respondent's capabilities: both in the way they were able to use their phones for the instrumental uses described in 5. *Instrumental affordances: mobile phones and social exclusion* and also to maintain their connections with friends and family which is explored in the next chapter.

8 COMMUNICATIVE AFFORDANCES: PORTABILITY, AVAILABILITY, MULTIMEDIALITY

So you use Facebook a lot? What other communication apps do you use?

WhatsApp. Thats it really: WhatsApp and Facebook.

How many times a day do you look at Facebook?

I'm constantly on it: I never put my phone down.

Why are you constantly on it?

It keeps me socialising because I don't go out. I socialise on my phone.

Nicole was 22 and pregnant and many respondents in this study shared her experiences of '*socialising on her phone*' as she described it. The communicative affordances of the mobile phone dominated many women's use of their phones. This is in keeping with findings from studies about women's use of mobile phones cited earlier in *2.7 Mobile phones and young women* (e.g Green and Singleton, 2013; Ling, 2014; Wajcman 2008) which suggest that women place a higher value than men on maintaining emotional ties with family and friends through their mobile phones. When asked what they would miss most about their phones if it were taken away the majority of respondents referred to relationships with close friends and family and nine respondents stated that they checked Facebook immediately after they woke up. Alexis 19, who had a small baby, just used her phone for her social life.

And do you ever use your phone for anything other than socialising?

No. I just use it for socialising.

This chapter looks at the communicative affordances of mobile phones with a focus on three particular overall affordances of the device: portability, availability and multimediality with the goal of answering RQ4.

RQ4. How do the communicative affordances of mobile phones affect the capabilities of 16-24 year old socially excluded women?

Thus this chapter looks at the positive and negative effects of these affordances on respondents' capabilities, and the extent to which these effects may be applicable to the broader population. In doing so it also looks at how these affordances might also be contributing to practices that are part of a "digitally gendered" identity.

When Nicole talked about "*socialising on her phone*" this statement reflects the lived experience of many of the respondents in this study: that the Internet, and by extension social networking sites such as Facebook and messaging apps such as WhatsApp are part of 'real' life. Savage *et. al* note the way that devices such as mobile phones help 'produce' the way people socialise: "*digital devices themselves are materially implicated in the production and performance of contemporary sociality*" (Savage *et al.*, 2010 p.8). For many respondents in this study, mobile phones were key to this sociality as they offer the potential to communicate and socialise through a variety of means: voice, instant messaging, social networking or texting. Each of these functions has particular affordances. For example, voice is immediate and personal whereas a post on a social networking site is one-to-many and there can be a delay in response. Like Nicole, some of the women in this study would never put their phone down and were constantly on Facebook. But, as we shall see in *8.4 Availability*, other women used the affordances of certain communication modes to maintain boundaries in their emotional lives and relished time away from their phones. Throughout this chapter we see a tension between women's desire to be connected and available, and their need for privacy and discretion.

8.1 Communicative affordances

The typology of communicative affordances used in this chapter draws on Schrock, who synthesized the previous decade of literature on mobile communication. He defines communicative affordances as an “*interaction between subjective perceptions of utility and objective qualities of the technology that alters communicative practices or habits*” (2015, p.1232). He distinguishes them from social affordances (e.g. Wellman *et al.*, 2003), which are more concerned with social structure. The three affordances of portability, availability and multimediality used in Schrock’s typology also resonate with significant themes that emerged during fieldwork and analysis of the data.

Table 18 below describes the three particular communicative affordances that emerged as significant themes in the data. It shows the relevant capability from Nussbaum’s (2003) central capabilities, the potential positive and negative effect on these capabilities of these affordances and also indicates the extent to which these findings might be relevant to a broader population or specific to a particular group.

Table 18. *Mobile phone communicative affordances (adapted from Schrock 2015)*

Affordance	Communicative Uses	Themes from data	Relevant Nussbaum capability	Positive effect on capabilities	Negative effect on capabilities	Limitations/applicability to other groups
Portability	Use while waiting or when out and about.	Physical closeness and ubiquity of the phone: kept in women's hands or on their bodies.	Being able to move freely from place to place; to be secure against violent assault, including sexual assault and domestic violence.	Means for homeless women to stay connected. Means to access support and maintain relationships. Use as a safety mechanism.	Women feeling addicted to devices. Challenges of finding places to charge phones. Possible health risks from storing them in their bra's.	Particularly relevant to homeless women. Safety mechanism particularly relevant to women at risk of crime: link between poverty and being at risk of crime.
Availability	Multiplexity of affordances including voice, instant messaging, SMS. Increased frequency of communications.	Women used a variety of apps and communication modalities, choices informed by friends, families and partners' choices.	Being able to have attachments to things and people outside ourselves.	'Socialising on the phone' means for women with mental health issues or isolated by single parenthood to stay connected.	Negative aspects of being always available. Technical and emotional challenges of maintaining boundaries.	Particularly relevant for homeless women. Less confident women challenged to maintain boundaries. Gender differences in use of communicative media.
Multimediality	Taking and sharing pictures.	Use of phone camera.	Being able to use imagination and thought in connection with experiencing and producing works and events of one's own choice	Taking and sharing pictures of children highly valued in family relationships.	Negative aspects of 'selfie' culture impacting on self esteem and relationships.	Possible lack of control over photos once they had been shared on social networks could impact negatively on vulnerable women.

8.2 Young women and social media

Before looking in depth at the communicative affordances of mobile phones, it is illuminating to briefly explore the literature on social networking and young people, as the use of these sites was central to respondent's communicative use of the devices. It should be noted that this is typical of this age group's use of mobile devices: Ofcom research from 2014 shows that, for 16-24 year olds, 77% of the time they spent on social media was on a mobile phone (Ofcom, 2014a). There is a large body of research dedicated to determining motivations for adoption and use of social networking sites (Kimbrough *et al.*, 2013) but this research will not be discussed in depth, as this PhD study is much broader in scope. However an understanding of key aspects of the social networking literature grounds this study's findings, and might illuminate something of the effect of the use of these sites on young women's capabilities.

Back in the day it used to be Myspace and that was mainly around music and music culture. A lot less personal.

In this quote Bella, a youth worker is commenting on the effects of social networking sites on her clients' lives and relationships. She compares Myspace, a social networking site focussed on music that had been popular with her clients a few years ago, with Facebook. Bella's phrase '*a lot less personal*' expresses something about the importance of these sites in her clients' emotional lives. danah boyd describes how social media platforms play a crucial role in young people's social lives, despite changes in the platforms that are popular at any given time.

Although the specific technologies change, they collectively provide teens with a space to hang out and connect with friends. (boyd, 2014a)

Livingstone describes how social networking sites are fundamentally changing the way young people construct their identity and relationships.

The very language of social relationships is being reframed; today, people construct their 'profile', make it 'public' or 'private', they 'comment' or 'message' their 'top friends' on their 'wall', they 'block' or 'add' people to their network and so forth. It seems that for many, creating and networking online content is becoming an integral means of managing one's identity, lifestyle and social relations. (Livingstone, 2008, p.394)

This change is reflected in this quote from Bella talking about the effect of Facebook on the social relationships of the young homeless people she worked with.

Facebook is a massive one. Cos they're constantly on Facebook, it's on their phones, it's in their pockets, it's in their bag.

Studies looking at the impact of the use of social networking sites on young people's social networks might tell us something about the impact on their capabilities, for example by providing them with opportunities for networking. Sen reviewed literature for a study of the use of digital media and social networking sites by 'looked-after' young people (children who are in the care of local authorities) and those leaving care. Sen's study is a useful comparator since it is a UK based study, and the community he was looking at had a similar socio-economic profile to respondents in this study, some of whom had been in care. Sen (2015) found that young people are not using these sites to broaden their social networks (seen by Strathdee (2005) as being a vital means for advancement in contemporary society) and build social capital (Putnam, 2001) but to strengthen existing strong ties.

A consistent finding is that young people mostly communicate online with those they already know offline and the content of most communication tends to be about everyday issues. (Sen, 2015, p. 4)

In a recent study boyd looked at whether social media was reworking teenagers' social networks in the US to understand whether structural inequality might be reduced by

young people making new connections on these networks. She concluded that “*This is not how youth use social media. As a result, technology does not radically reconfigure inequality*” (boyd, 2014a, p.173).

It might also be the case that young women are more likely to use these sites for emotional support than young men are. A study of digital inequalities from 2015 suggested that women are more likely to use the Internet for communication and social support than men (Robinson *et al.*, 2015b), in a reflection of broader social norms. This reflects the findings from research on women’s communicative practices on mobile phones discussed in the section on *Gender and mobile communication studies* in 2.7 *Mobile phones and young women*, where women were seen to be carrying out ‘gendered’ work in maintaining relationships through their mobile phones.

8.2.1 “Mainly just Facebook”

Six women in this study said, like Emma who is quoted below, that they mainly used their Smartphone for looking at Facebook. This resonates with the quote from Sen (2015) above.

Are there any apps you particularly like using on there?

Mainly just Facebook to be honest.

Two youth workers confirmed this view of Smartphones and technology use as being limited to social networking. Emily, a youth employment advisor who worked with young unemployed people in Brighton, reported that her clients use of technology was limited to social networking.

Young people – or at least the ones I work with – get very comfortable using certain tools so they can navigate their Facebook page because they use it every day but I know the ones I’m working with if we go into their e-mails I’ll see pages and pages of Facebook notifications and they will say Facebook is always e-mailing me and I don’t know how to turn it off.

In the framework of the capability approach the lack of these digital skills can be seen as the absence of ‘conversion factors’, which young people possess to achieve the ‘functionings’ (or realised achievements) of getting a job. Whilst in the framework of affordances these skills are seen as effectivities, which enable a person to take advantage of a perceived affordance. Yates and Littleton see these effectivities as dependent upon “*the cultural practices and resources that their discursive position provides*”. (1999, p.571) In this sense we could see that the ‘effectivities’ that these young people need to take advantage of digital tools for job seeking are limited by their ‘discursive position’ as unemployed, working class young people. This should be understood in the context of the literature which discusses the links between socio-economic status and digital skills and access in 2.5 *Social and digital exclusion* (e.g. Helsper, 2012; van Dijk, 2013; van Deursen et al., 2014). For example work Bynner et al. (2010) shows that an absence of what they describe as ‘digital competence’ increases the likelihood of an individual experiencing social exclusion.

Given some women’s limited use of the phone it is possible to suggest that the device was only having an impact on their capability to have good relationships – “*Being able to have attachments to things and people outside ourselves*” – rather than on other aspects of their lives. When Bella, a youth worker talks in 5.2 *Mobile phones and employability* about the challenges her clients face using the gov.uk website she is implying that they face issues using the instrumental affordances of their phones to find address issues related to social exclusion (see 5. *Instrumental affordances: mobile phones and social exclusion*).

8.2.2 Communicative platform design and capabilities

So whats the first app you look at in the morning?

Facebook!

How soon after you wake up do you look at Facebook?

Seconds!

Sarah was 16 and still living at home with her parents. She was one of nine respondents – almost a third of the total – who checked Facebook soon after they woke up. This section looks at the design of the communication platforms the respondents were using to provide insight into how they might have affected their capabilities, for example by contributing to a feeling that their phones were controlling their behaviour in some way. Sarah admitted to feeling that her phone was controlling her as she responded to its communicative affordances.

Do you feel like you control your phone or does it control you?

I guess I should feel like I'm in control but I know that in reality it sort of is in control of me.

In what way?

I don't know... because I'm addicted to it! I just want to know what's going on and I just want to look at it and I want to see who's texted me and see whats going on for the day.

Samantha felt unable to control the way that she was receiving notifications from Facebook on her phone.

I keep getting notifications every five seconds and I'm like ohmigod. Yeah, like all my friends poking me or commenting on my pictures or commenting on my nephew's pictures and I'm like ohmigod.

Zara spoke about how she found it hard to resist clicking on notifications that she received on her phone.

What was the thing you used to look at first thing in the morning?

Facebook. Then emails. And anything that's got a '1' next to it [*indicating a notification*] that comes directly to your phone.

Do you find it hard to resist clicking when you see that?

Oh god yeah.

Jessica also talked about the fact that having the Facebook icon on her home screen had '*made*' her use it. The language she uses implies that it is almost against her will to be using it as much as she is. She seemed unaware of the fact that she would have easily been able to remove this icon by adjusting her settings.

Having Facebook at the touch of a button is a bit annoying because I don't like to go on it that much. I try to avoid Facebook. I just don't like going on it unless it's [*for*] talking to friends that have moved out of the country, [*it's*] cheaper than phone calls. But I wouldn't go on it half as much before I got my phone because it's just there on my front screen, tap of a button.

Morgan spoke about the Facebook icon in the same way.

I did have Facebook on there. I would go and check on it quite a bit cos it was just **there** [*emphasis on there*] on your screen.

It could be argued that these four women are all speaking about Facebook in a way that implies that are not in control of the way they use the site on their phone. To understand these women's relationship with Facebook it is worth considering the broader financial context: it is a commercial platform that makes money through the commodification of its users' data (Sun and Hart-Davidson, 2014). The platforms' designers therefore have a vested interest in people making heavy use of the site to maximise the company's profits. Writing about Facebook's design team, a 2012 article described one of the ways the company designed the platform with the intention of creating interactions which generated positive emotions.

Facebook doesn't just want to catalyze interactions. It wants to catalyze emotions. It wants you to have the same feelings—the positive ones at least—that you have when you cuddle up to friends and family in person. (Boyd, 2012)

A study looking at the psychophysiological effects of looking at Facebook activities suggested that these designers might have been successful in their goal of creating a positive emotional experience.

Facebook use is able to generate an experience marked by a specific psychophysiological pattern in comparison to relaxation and stress situations, correlating in particular with an affective state characterized by high positive valence and high arousal, leading to a core flow state that might represent a key factor able to explain why social networks are spreading out so successfully. (Mauri *et al.*, 2011 p.730)

Lowry *et al.* (2013) describe this 'flow' state as being linked to hedonic, intrinsic motivations in using a system. Lowry *et al.* describe the way that user perceptions of enjoyment are increased by the volume of stimuli they receive.

To capture and hold a user's attention, a constant stream of interesting stimuli must flow to the user. An increase in relevant hedonic stimuli will positively impact one's perception of a hedonic experience. (2013, p.36)

The display of the Facebook wall of posts also makes it easy to scan on a touch screen phone, as noted by Licoppe *et al.* in their analysis of recordings of Smartphone use.

Facebook wall of posts has a relatively smooth pragmatic structure with respect to finger-mediated scanning on a touch screen (with the exception of the subtle 'bump' made by the transition from the day's posts to those of the day before). One may scan from the top to the bottom almost continuously with the same kind of gesture. (Licoppe and Figeac, 2013 p.18)

A study that logged users response to mobile phone notifications found that these were perceived as reassuring by users.

Our participants perceived mobile notifications as an integral part of using a mobile application, especially social applications, and as an indicator of contact; therefore their existence has a reassuring effect on users. (Ferreira *et al.*, 2014 p.98)

But this ‘reassuring effect’ could also be seen as promoting addictive or compulsive behaviour, such as the desire to click on notifications cited by the user above. Analysing video of screen captures of users iPhone use over 100 days, Brown *et al.* found that the communicative affordances of the device provided a structure that might mean that users feel in some way compelled to respond to messages they receive.

A ‘compulsive’ aspect of use can be seen in the nature of communication on mobile phones; messages often demand a reply. Within conversation analysis this is referred to as ‘adjacency pairs’; questions demand answers, and so conversationalists make use of questions to manage participation. This does not determine or control behaviour but again acts as a structure that can be used by those interacting with a device – messages can be replied to (although again, frequently, they might not be). The episodic and sequential nature of use might explain some other compulsive aspects of mobile phone use; that there is a desire to complete particular actions and to answer messages received. (2014, p.227)

For some respondents this compulsive aspect of use translated into a feeling of being ‘nosey’ about what was happening on Facebook. Three women used the term to talk about checking Facebook, suggesting that they may have had feelings that they were intruding where they were not meant to be when they were using the site.

When you did have Facebook on your phone were you checking it a lot? How often?

Probably about six times a day.

What were you looking for?

Just seeing if I've got any messages, checking out, being nosey. Pictures, what everyone does really.

Single mum Hannah, 21 used Facebook when her baby was asleep.

What do you use Facebook for?

Being nosey! Boredom! You know the baby falls asleep and there's nothing on telly!

Tanya, 17, also spoke about Facebook as a ‘cure’ for boredom.

Do you ever turn it [her phone] off?

Yeah I do turn it off sometimes but then I get bored. I just sit there and get noseey.

8.2.3 Differentiated experiences of micro-usage

Some recent literature on Smartphone use has drawn attention to how the use of the device is adapted to different temporal circumstances with the emergence of the term ‘micro-usage’ or ‘micro-breaks’ as a way to describe small, frequent interactions with the device. In their study of mobile phone usage patterns Ferreira *et al.* note that Facebook is one of the applications that is most likely to be used in this way, possibly because of the way they are notifying users of new information.

Yet, these social applications rely on new information and updates (providing or consuming) that are being pushed to or pulled from the device. It is therefore likely that they are popular because they lend themselves well to micro-usage. Just like a telephone ringing in a home 20 years ago prompted immediate answer by the nearest family member, the notifications may trigger our innate need for social interaction. (2014, p.98)

These design features and experiences might well have been experienced differently by respondents in this study than by those in studies cited above which talk about the role features such as ‘micro-breaks’ play in participants’ working days. The respondents in Brown *et al*’s (2014) study were from variety of professions, including opera producer, massage therapist and nanny whilst Ferreira *et al*’s study (2014) included students, researchers and one unemployed individual. However in this study 12 (40%) of respondents were unemployed whilst 8 (27%) were stay at home mothers.

Given their status, it is likely that these women’s time and Smartphone use might have been structured differently than the employed professionals cited in these studies. So, for example, Hannah who is quoted above used Facebook when her baby was asleep. For the unemployed respondents it is possible to argue that the ‘compulsive’ checking of Facebook might have been a negative experience – a relatively low-cost way of

filling up their time. This could be seen as having a negative effect on their capabilities. Whilst we shall see in 8.4 *Availability*, Facebook was a means for women to stay connected with friends and family, it was also a source of conflict and drama.

8.3 Portability

Your whole life is on there isn't it?

Pretty much!

Do you worry about losing it?

No, it's in my hand too much.

Brittany was not the only respondent who talked about keeping her phone close to her most of the time. Megan, quoted below, had gone to the trouble of modifying her bra so she was able to carry it around next to her at all times. The portability affordance of mobile phones is what sets it apart from previous communication devices such as the landline telephone and, as such, was an early concern of scholars of mobile communications. Turkle sees that the mobile phone “*compels us to speak of a new state of the self, itself.*” (2008, p.121) in which we are “*tethered to our “always-on/always-on-you” communications devices and the people and things we reach through them*”. Writing in the same volume Katz describes the impact of mobile phones on our social and emotional lives:

Mobile communication has allowed people to go farther and yet stay effectively closer... [it] has allowed people to modify their immediate social environment while on the move, adjust their networked relationships in detail, and dynamically reorganize their schedules and activities. (2008, p.444)

Fieldnotes record an observation of how the portability affordance is typically associated with affording communication over long distances and how that manifests in the lives of respondents who are often using this affordance to maintain relationships with people who live close by.

Tropes about mobility and technology tend to involve big distances, international businessmen but the connection that technology enables for these women is often about staying in contact with families who live on the other side of Brighton (5? 10 miles?). It's incredibly important still.

Schrock (2015) describes communicative uses that relate to the phones portability affordance as "*During commute or waiting*". This was significant during fieldwork as most of the interviews took place in a waiting room for an advice service where women would typically be using their phones whilst waiting for an appointment. Asking them about their phones was a useful conversation starter when women were approached for an interview.

8.3.1 Positive aspects of portability affordance

For the young women in this study the significant themes which emerged that were related to the portability affordance were the role of phones as a way to access support from family and friends, and the use of the phone as a safety mechanism when they were out at night.

How would you feel if I took your phone away from you for week?

Being able to call people and being able to text people because obviously I'm away from my friends at the moment so I'll be a bit stuck for contact.

Amanda was staying in temporary accommodation in Brighton away from her family who lived in another town. She revealed in the interview that she was forced to leave her family home because of issues with domestic violence. For her the phone was a means to stay in contact with friends whilst away from her hometown. Although the respondents in this study were typically using Smartphones with multiple functions and apps, the functionality they valued most highly was this ability to talk to family and friends and contact them on Facebook. As only six women, or 20% of

respondents, were still living at home with their families the portability affordance was especially important.

One interview question was “*If I took your phone away what would you miss most about it?*” and the most frequent responses focussed on relationships with close friends and family, as these quotes demonstrate. This relates to the gendered use of mobile phones in the work of maintaining family relationships identified by Wajcman *et al.* (2008).

Ashley

If I said you had to do without your phone for a week, what's the thing you'd miss most
Probably talking to my friends really.

Brittany

I wouldn't be able to contact my family cos they live the other side of Brighton. So constantly, everyday I'm on the phone to my mum.

Elizabeth

I'd be lost! I would literally be lost!
What is it that you'd miss the most?
Just keeping in contact with my family cos my family are on Facebook.
So you use Facebook to keep in contact with your family?
That would be the hardest thing.

Courtney

What do you use your phone for most?
To keep in contact with my mum.

The way that these women used their phones to maintain contact with parents and partners could be seen as part of their emotional transition from adolescence to adulthood. Ribak describes this using the metaphor of the ‘*transitional object*’ (Winnicott, 1969). The term is used in psychology literature to describe a comfort

object such as a teddy bear, which is used by small children to create secure environments in which to practice being separated from their parents. In her study of the use of mobile phones by Israeli teenagers, Ribak sees how the mobile phone becomes such an object for her respondents: “*a meaningful material object that plays a crucial role in the dynamic relationships of intergenerational separation and connectedness*” (2009, p.192). The quotes above which emphasise women’s use of the phone for maintaining relationships reflects Ribak’s suggestion that it is not the substance of the message being conveyed using the phone which is important, but rather a symbol of potential communication.

The mobile phone is important less as a means for actually communicating particular information, and more as an object that encapsulates the potential for communication. (*ibid.* p.193)

8.3.2 *Use as a safety mechanism when out at night.*

For some respondents in this study the portability affordance of the mobile phone was a useful means to stay safe when they were out at night: with eight respondents reporting that this was the case. This could be seen to have a positive effect on their capability of “*Bodily Integrity. Being able to move freely from place to place; to be secure against violent assault, including sexual assault and domestic violence*” (Nussbaum, 2003, p.42). This was also the case for women like Rachel, who we met in the previous chapter, who was living in a tent and said that her phone was an important means to keep safe.

Does the phone help you in a practical way?

Yes it keeps me in contact with the world.

Megan, 23, described her phone as ‘protecting’ her: she would dial the emergency number 999 and keep her thumb over the call button when she felt particularly vulnerable.

So do you take your phone out with you at night?

My phone goes everywhere with me.

And how do you keep it?

Bra.

Have you got a special iPhone pocket in your bra?

Yes! In my bra, where a pad should go I slide it in there so it can't fall out.

Do you feel safer having it in there say if you were out on your own at night?

Yeah ‘cos at least that way I can ring someone. I feel like my phone protects me and if I really feel uncomfortable I dial 999 and leave my thumb over the call button just in case I need it.

Where I live there's loads of alleyways.

When Megan says ‘*Where I live there's loads of alleyways*’ she is implying that she could be at risk of attack from someone hidden in an alleyway. Research suggests low-income women such as those interviewed for this study are more likely to be a victim of street crime than wealthier women. Webster and Kingston (2014, p.19) conducted a literature review to examine the link between poverty and crime in 173 of the most cited and/or important articles and monographs published between 1980 and 2013 in the United States, United Kingdom and Europe. They found that people living in poor neighbourhoods are generally more likely to be the victims and/or perpetrators of crime. The same study showed that local crime surveys of neighborhood safety in the UK found that women were disproportionately at risk of being a victim of crime.

8.3.3 Negative aspects of portability affordance

However several women felt that their phone might have a negative effect on their capability to be safe at night by making them more like to be a victim of crime. This was the opinion of Victoria, 23 who said that ‘your phone isn’t going to save you’.

Do you feel like it makes you safer when you're out at night on your own?

Not really cos even if you was to be targeted by someone your phone isn't going to save you. And then if you do have your phone out so you think anything won't happen you get attacked for your phone.

Sarah, was 16 and expressed a similar opinion.

Do you feel more confident being out at night with your phone or does it worry you?

Sometimes I get a little bit paranoid cos you might lose it or someone might take it while you're out but I try not to let that bother me.

Victoria and Sarah are highlighting a negative aspect to the portability of phones in that they perceived that it might make them more likely to be a victim of crime. This is a fear grounded in reality, as young women are more likely than any other group to be a victim of phone theft. UK Home office figures from 2012/13 suggest that 14-24 year olds, and particularly women, are most vulnerable to phone theft. The same study suggests that the popularity of the iPhone with these young women might be the cause of this.

...some brands of phone were more likely to be stolen than others. There are several factors that are likely to affect this, from how desirable a phone is including its potential resale in second hand markets, to how easy it is to steal the personal data contained within it. Analysis of hundreds of thousands of data points describing theft in London from 1 August 2012 to 5 January 2014 shows that over 50 per cent of all phones stolen were Apple iPhones. (Home Office, 2014, p.10)

This paradoxical situation that women were simultaneously felt protected by their mobiles and were, in fact, at greater risk of theft because they were carrying a valuable iPhone exemplifies the tensions in the communicative affordances of mobile devices.

Other potentially negative aspects of the portability of the device relate to the fact that women tended to keep their phones with them at all times. This undoubtedly

contributed to women feeling that they “*couldn’t live without their phones*”. It is possible that this placed a bigger drain on their phones’ batteries and, as we saw in the previous chapter, battery life was a major annoyance. Several women – Jordan and Rebecca – also complained about the fact that when their friends tended to look at their phones the whole time then they were out with them rather than socialising with their friends.

When I’m out with my friends or out with my family why should I be on my phone or Facebook whole time? I think it’s rude, it’s *really* rude. Sitting at the dinner table, somebody’s on their phone it really annoys me actually.

8.4 Availability

The portability affordance of the mobile phone is entwined with the next communicative affordance defined by Schrock: availability. He draws attention to three communicative uses: multiplexity, increased frequency and directness. This communicative affordance, and the previous affordance of portability contribute to Nussbaum’s capability of “*Being able to have attachments to things and people outside ourselves*”. The aspects of this affordance that are discussed in this section are multiplexity, socialising on the phone, the perceived negative aspects of always being available and the technical and emotional challenges of maintaining boundaries.

8.4.1 Positive aspects of availability affordance

What would you miss most if I took it away from you?

Just contact with people, I have really bad social anxiety so I don’t really go out, I prefer to just talk to people over my phone so all of my communications would be gone.

Jordan was an articulate 19-year-old shop assistant who suffered from social anxiety. Field notes from the interview recall how important it seemed to be to Jordan to use the phone to maintain social contact. Respondents articulated this sense of gaining

emotional support through the communicative affordances of their devices in various ways. This section explores the different reasons for the use of a particular app or communication mode, reflecting on the effect of each on respondents' capabilities.

Schrock draws on the work of Boase to talk about the 'multiplexity' of communication affordances. Boase describes the emergence of new "*...patterns of multiple types of communication media – including in-person contact – to stay connected to their personal networks*" (Boase, 2008, p.491). This resonates with trends in mobile communications studies, most notably the anthropological work of Madianou and Miller (2011) on 'polymedia'. This view understands communications 'horizontally': seeing how different communications media complement one another. This horizontal view of communications was clearly the case for the women in this study. When asked about what apps they used for communications, respondents would often talk about using several different apps and modes, including SMS and different messaging platforms such as WhatsApp. This is illustrated by the following conversation with Amber which took place as we looked through the home screen of her phone at the messaging apps she used.

Yeah... all of these. I've got Snapchat, Skype, Snapcrack - it's like Snapchat but it lets you keep the pictures, WhatsApp, Facebook, Instagram, Twitter, Messaging [*Apple proprietary messaging platform*], and Tango, FaceTime.

Respondents choices of which particular app or mode of communication to use on their phones often seemed to be informed by friends, families and partners' choices. For example, Alice describes how she responds to messages on her phone using the same app as she received the message. The sender of the message informs her choice of communication mode: rather than choosing an app based on its affordances or functionality.

Do you use WhatsApp?

Yeah I have WhatsApp. But whoever messages me... if they text me I text back, if they WhatsApp me I WhatsApp back.

Sometimes these choices were informed by cost factors, which was clearly an issue for the low-income women in this study. For example Samantha talked about how she used Viber to communicate for free with friends in other countries but also recognised that these choices are also informed by the platforms her friends are using.

Do you use any messaging apps?

I use Viber, Viber's really good. Say if one of your friends has got viber and lives in another country you can talk to them for free. If you run out of calling credit you can call them and text them for free. And I use Line it is the same thing where you can text them. And I also use Skype, and I use Tango Tango. It is a bit like Skype you can see them face to face. And I use WhatsApp.

And where would you say most of your friends are?

A bit of everywhere really. Sometimes I see them on WhatsApp. I catch them anywhere

When you sign up to a new thing like Snapchat, why would you do that? Is it because of your friends?

Yeah because my friends are on it and I don't really get to see my friends that often.

Despite the many communication apps and modes available to respondents, as illustrated in the list of apps recited by Amber, respondents were still talking about being heavy users of SMS. It is possible that this is due to the universality affordance of SMS: it is available to all mobile phone users if they have credit so there is no need for sender and receiver to have a dedicated app installed. It also does not require a phone to be connected to the Internet, which we have seen in 7.4. *Intermittent disconnection and capabilities* was a problem for some respondents. So, for example, Lauren, 17, had a variety of apps on her phone for communicating with friends, but was still a heavy user of SMS. Victoria was 23, pregnant and homeless. She relied on SMS and voice as her main means of staying connected with her friends and family.

I'm not one of these people with all these different social networking sites.

That was going to be my next question - whether you use Whatsapp, Instagram?

The only one I do use is Facebook.

And do you use it a lot? Is it one of your main ways of keeping in contact with people?

No, I do it with texting and calling.

Alice was a single mother and used SMS to connect with friends and family after she had put her baby to bed.

So you text a lot still as well?

Yeah mainly at nighttime when he [*her baby*] is asleep.

And you text rather than WhatsApp?

Yeah I think I'd rather text.

8.4.2 Affordances to manage emotional boundaries

For other women, the affordances of a particular platform were a means to manage boundaries. This could be seen to have a positive effect on their capability to lead a fulfilled emotional life. For example Sandrine chose to use a messaging platform called Qiq to talk to strangers, as it was easier to delete them than when she communicated with people on WhatsApp. However at the time of the interview Sandrine's phone contract had been cut so being able to use an app such as WhatsApp – which uses the phone's data connection – was also a means for her to stay in contact with her support network when she had financial problems.

So what apps do you use on your phone? Which ones do you use most?

WhatsApp, Facebook, Instagram.

Whats your favourite app right now? Which one do you use most?

I think it's WhatsApp because all my friends will be texting me

And you can just use that with an Internet connection you don't need a phone contract for it?

That's right

And you just add people that you know on WhatsApp? Do you ever get strange people trying to add you on WhatsApp?

When it comes to strange people I use Qiq, because Qiq you just have your user name.

Whatsapp is your number - your phone number. 'Cos with Qiq if you have a stranger talking to you and they are being really nasty you can just delete them. But with WhatsApp the person

will have to delete your number.

Brittany, 22 talked about how people she has as friends on Facebook would not have her personal phone number, so her communications with them would be limited to that platform, this is contrast to her connection with '*personal family friends*'.

People I have on Facebook - they wouldn't have my phone number... they're just people I talk to on there. Obviously personal family friends they're all on my phone.

However Brittany also reflected on the way Facebook enabled the strengthening of inter-generational ties, as her grandmother used Facebook to communicate with her many grandchildren and great grandchildren.

My grandma's on Facebook and she's got 15 children and about 90 grandchildren and about 40 great grandchildren so it's the only way she can communicate with all of us.

Most respondents were – like Victoria and Samantha quoted below – comfortable blocking unwanted contact from strangers on Facebook.

Victoria

So on Facebook do you ever get strangers trying to add you?

You get the odd random foreign person when you have no idea who they are. I don't accept people unless I know them.

Samantha

You know how to block people on Facebook, has that been a problem?

No I just go onto them and unfriend them.

Do you ever get strangers trying to friend you?

Yeah I've had a load. I just keep ignoring them.

8.4.3 Negative aspects of availability affordance

Some people have said to me that they think Facebook causes a lot of fights nowadays?

Oh god yeah, [it] just causes a lot of dramas. You put a status up and then someone thinks it's about them. It's supposed to be about communicating but it's not. It just causes dramas.

Zara was 19, pregnant and homeless. Her feeling that Facebook was a source of stress and drama, expressed in the phrase *“It’s supposed to be about communicating but it’s not”* was shared by other respondents in this study. This section explores the dramas that women experienced on Facebook and other negative aspects of being available for communication, and also looks the technical and emotional challenges of maintaining emotional boundaries on mobile phones.

Two of the four Featurephone users in this study were managing their availability by not sharing their phone number. Rebecca had just started using a Featurephone after breaking her iPhone, but had limited the contact details she transferred to her new phone to close friends, her family and her Vicar. Her stated reason for this was that *“Getting messages from everybody the whole time, it’s annoying”*. Another Featurephone user, Kayla, resented the availability affordance.

What do you hate about phones?

People can get in touch with you!

Do people find it difficult to keep track of you?

Yes!

Is that all right?

Yes!

Kayla had responded to this affordance by limiting the people she shared her phone number with, using Facebook as her main means for people to remain in contact with her.

Facebook is the way that most people try to get in contact with me because they usually don't have my number.

So how often do you check Facebook?

Unfortunately every day!

Victoria had not adopted any strategies to manage her availability but said she was relieved when she was away from her phone for a week and was out of contact.

So if I took your phone away from you for a week what would you miss most about it?

I don't know. I went on holiday a few weeks ago and I didn't have my phone with me for a week and I didn't feel lost. I felt relieved in a way. I didn't have to deal with anyone.

These three women had housing problems: Kayla was homeless, Victoria was pregnant and looking for new housing and Rebecca was being threatened with eviction. These problems would have undoubtedly been a source of stress for these women and it is possible to suggest that they were using the availability affordance to keep a distance from people: reducing any potential stress caused by having to deal with people they did not want to communicate with. This was most certainly the case for Hailey who was 16 and mother to a small baby. She had taken the decision to delete her Facebook account. The language she uses suggests she was managing her availability in response to changes in her life since she had become a mother at a young age, possibly to protect her child.

What made you delete your account?

Since I had my baby people want to come back in my life. I'm just not interested in that kind of life anymore.

Morgan, another young mother, had deleted her Facebook account.

But you don't use Facebook or anything like that?

I've kinda gone off Facebook and all of that.

[I tell her that I've disabled my account]

Yeah I've disabled mine and then I went into check it and I was like oh...nothing's happened.

She related it to the fact that her life had become somewhat uneventful since having her baby.

I don't see the point of updating everything about my life, there's nothing to tell [laughs]. I don't do anything that interesting.

Megan talked about changing her phone number in order to avoid people she did not want to communicate with.

And have you kept the same phone number for a while?

No I change it a lot.

And why do you change it?

Because I don't like certain people having my number!

8.4.4 Emotional challenges of maintaining boundaries

These women were all talking about taking control of their emotional boundaries and preventing unwanted contact by managing their availability – sometimes through drastic means such as changing phone numbers or deleting Facebook accounts. However this proved very challenging to other women in this study. Bella, a youth worker commented on the way that she saw young women that she worked with struggling with emotional boundaries on social networking sites. Bella felt her clients were getting a false sense of self-esteem and emotional support from the interactions they had on these sites.

Do you find they haven't got a clear sense of those boundaries?

Boundaries is [sic] huge - they don't have a clear sense of boundaries because it is so easy, and everybody else is doing it and I think a lot of it is to do with self esteem as well. They write how they're feeling and then they instantly get information back from other people - either hopefully wanting to support you or giving you a compliment like 'why is my life so rubbish' 'don't worry about it babes you're an amazing person'. And it's this kind of instant, fake, kind of self-esteem boosts.

Alice, a single mother of 21, had found out about her ex-boyfriend's new relationship on Facebook. She had then blocked him and his whole family to avoid emotional upset. She held the affordances of communicating on Facebook partly to blame for poor communication on the platform, since it was difficult to express nuanced emotions or constructive criticism.

I think a lot of people take things the wrong way because you can't express the way you're saying something.

Like Zara who was quoted at the beginning of this section, Elizabeth identified Facebook as a cause of arguments. Her phone had been hacked by someone she knew so she had starting locking her phone.

Do you ever worry about people getting access to information on your phone - do you keep it locked?

Yeah I've got a password on my phone because a while ago I had my phone hacked into.

By somebody you knew?

Yes. A girl.

Do you think phones cause that sort of trouble?

Yeah.

Fights and people hacking each other?

Yeah it's mostly caused by people like if they're in a relationship or whatever trying to split people up.

Rumours?

That sort of problem

People commenting on statuses?

Yeah all the time starting arguments for no reason.

Madison recognised that arguments were starting on Facebook but she also admitted to starting them herself. She cited the text input affordance of the Facebook as a justification for increased aggression. In the interview Madison used the phrase "*they think that by writing it down it's less hard*", presumably inferring that it is easier to be aggressive in writing, than face the consequences of in-person aggression.

So many fights are caused on Facebook

How do they cause fights on Facebook?

Comment on a status if someone doesn't like it they'll comment. A lot of petty fights

So people have always had fights, how do you think that would have worked out before Facebook?

It wouldn't have gone that far because they think that by writing it down it's less hard. I've done it myself.

8.4.5 Technical challenges of maintaining boundaries

For some women in this study, issues around availability related to their difficulties navigating the privacy settings on social networking sites, particularly Facebook. A 2014 UK study found that “*Young people are much more likely than older people to have taken action to protect their privacy on SNSs [social networking sites]*” (Blank et al., 2014, p.25), but there were variations within their sample that may have resonance with the women in this study. For example Blank et al’s study found that respondents with higher education degrees were over twice as likely to have changed privacy settings than those with no educational qualifications. Only one of the respondents in this research had a degree and others who gave information about their educational qualifications typically had an NVQ level qualification and no A levels. Towards the end of fieldwork my fieldnotes recorded an observation of a potential connection between socio-economic status and respondents awareness of online privacy issues.

Research diary extract

I'm wondering if there's a correlation between socio-economic status and privacy issues, or cynicism about phones? The girls who are really cynical about the whole phone thing seem to be more well-spoken, perhaps better educated.

Blank’s study also looked at the relationship between people’s self-reported ability using the Internet and found that 32% of those who reported only poor ability have changed their privacy settings compared to 79% of those who rate their ability as excellent. Whilst respondents in this research were not asked directly about their ability to use the Internet, the fact that more than half of them did not have their own computer would have impacted on these skills. It is also possible that they would have struggled with the affordances of the small screen whilst attempting to adjust privacy settings on Facebook.

These settings were a cause of stress to some women in this study. For example, Lauren found the interface confusing when she tried to change her settings.

Some people have a problem with the privacy settings on Facebook, what do you think about that?

They should make it more simple so it's easier to use.

What do you find difficult about it? Is it because you've got to burrow down on lots of menus?

Yeah you've got to go onto a little menu and then it's just a little button in the corner and then you have to go through it all and you have to make sure your settings are secure.

This section has looked in brief at the privacy issues faced by young women using social networking sites, showing some of the anxieties they experienced when trying to maintain their privacy and integrity on these sites. These women's experience show us how these issues may impact on Nussbaum's capability of "*Being able to have attachments to things and people outside ourselves Not having one's emotional development blighted by fear and anxiety.*" (2003, p.42).

8.4.6 Technology-facilitated sexual violence and harassment

Samantha could be seen to be experiencing this fear and anxiety when she experienced harassment on her phone.

I've had the same number all the way through for all my phones. I'm changing it soon though.

Why are you changing it?

Cos I keep getting harrassed by a boy. He won't leave me alone.

Have you reported it to anybody?

Yeah. I've blocked him but he can still call me cos he knows my number off by heart.

Samantha was answering a question about changing her phone number when she revealed that she was experiencing harassment on her phone. This harassment could be seen as online sexual harassment and cyberstalking – one of the six types of technology-facilitated violence and harassment defined by Henry and Powell (2015). Henry and Powell found that "*research suggests that women are disproportionately*

the targets of harassment and hate speech in cyberspace" (2015, p.2). A UK report from 2013 described the ways that social media can facilitate and amplify violence against women and girls.

Where there may be multiple perpetrators, for example in the cases of forced marriage, 'honour' based violence or peer-on-peer abuse, social media can be used to control movement, threaten, harass and stalk women and girls. They may also be used by perpetrators to communicate and plan violence. Social media also lends itself to the widespread distribution of violent and misogynistic imagery, as well as messages which can constitute direct harassment and threats. (End Violence Against Women Coalition, 2013, p.7)

The same report found that younger women were more likely to be at risk of harassment and abuse as they were heavier users of social media.

Whilst respondents were not asked directly about their experiences of harassment relating to their phones (as discussed in 3. *Research design*), some women revealed information that suggests they may have been at risk of harassment and unwanted attention. For example Jessica revealed a change in her security practices, modifying the availability of her messages on her mobile phone, as she was concerned about her ex-partner reading them.

Do you keep your phone locked?

I haven't up until recently.

But you've started doing that recently? Why did you start doing it?

I didn't want my ex going through my messages.

In order to gain some insight into this issue without having to broach it directly with respondents, an interview was carried out with Stephanie, the manager of a project that supported young women at risk of sexual exploitation. Whilst some of the women she worked with were under the age of 16 and therefore outside the scope of this research, this interview provided an insight into how women's availability on phones

might play a role in technology facilitated sexual violence. Stephanie talked about her experiences of seeing mobile phones used as means to control women in abusive relationships.

It is a classic feature of an exploitative relationship in what we call the boyfriend model. What that means is that it starts off as some sort of relationship where it is all lovely and wonderful and you've got the honeymoon period and the use of phones is a reassuring factor. And then it becomes a method of control where if they don't answer that text or if they don't answer their message on Facebook or BBM then that's when the pressure starts coming in and the stalking behaviour that can be quite threatening.

In this context, the availability affordance is potentially a source of conflict and abuse: as women are expected to be available for communications with their partners at all times.

And all these accusations can come out so 'you're not answering my texts where are you and who are you with and prove it'. And then they get their passwords and then they access their Facebook sites or their BBM sites or whatever so they take over their electronic world, which can be quite scary.

Stephanie suggested that this access and availability was a critical factor in the maintenance of these abusive relationships.

And part of being in one of these relationships is that they think there has to be some kind of transparency otherwise there's no trust. So if they don't allow their partners access to their information then they don't trust them.

She also reported that the women she worked with found it hard to reject advances from men online.

So sometimes the only way round that is to change their password is to change their phones and their numbers completely. And there seems to be a real reluctance to block people. I have noticed this quite a lot. Sometimes people say 'I'm getting messages from strangers and they're saying this and they're a bit rude... Why don't you block it? erm no it's alright they'll stop doing it'.

Like they feel they haven't got agency or choice about it?

Yeah. They know how to do it there just seems to be this. It is almost like a politeness where

it's rude to unfriend someone or it's rude to block someone or to barr them from accessing your information.

8.4.7 Dating sites on phones

Bella, who worked with young homeless and unemployed women, was interviewed about how her clients were using online dating sites on their phones. Again, this topic was not broached directly during interviews so this was an opportunity to explore this sensitive issue. She talked about how one of her clients who had mental health problems was using an online dating site on her mobile phone. Bella was supporting this woman and trying to help her stay safe when using the site.

I can't tell her what to do, but she knows every time she tells me she's meeting up with someone from [*dating site*] I always go through the same questions. And it always comes down to me in the end asking her if she wants condoms. Because she's going to meet up with him. And the only thing I can do is tell to make sure that she meets up with him in a public place, people know where she is, keep your phone on you.

This young woman was becoming distressed by her experiences of availability for online dating on the site, which had not resulted in a long-term relationship. Bella also connected the ease of access to this site on the woman's phone to her continued use.

Well, it's never resulted in a relationship, it's always that one weekend. And then she comes in the following week and she's really sad. And I don't ask her how it went it's obvious. And then a couple of weeks later she'll meet someone else and she's in this cycle cos it's so easy to just jump on [*dating site*]. Phone's just there, she's on the bus on the way to her mum's house and she's on the phone, it's just so easy. It's so easily accessible and so easy to use.

These intermediaries are talking about the extremes of women's experiences of negative relationships and harassment that relate to the availability affordance of the phone.

8.4.8 *Availability, portability and dependence*

What if you have to go on holiday somewhere with no signal?

If I knew there was no signal I wouldn't go on holiday.

Does this quote from Nicole suggest that her phone is impacting negatively on her capability not to have her “*emotional development blighted by fear and anxiety*”? It seems as if mobile phone itself, and her relationship with it is causing a degree of anxiety, since she will not consider going on holiday to a place without a mobile phone signal. Jordan and Rebecca were infuriated by their friends' dependence on their phones, finding it annoying that they would be looking at them constantly when they were out socialising. Yet the section 8.2.2 *Communicative platform design and capabilities* illustrated how this feeling of dependence and compulsion to check notifications might in part be caused by design features of platforms such as Facebook, and by feelings of reassurance which were seen to be generated by checking notifications. This could arguably even be seen as vindication of a view of “technological determinism” (Smith and Marx, 1994), as the design of the software seems to be determining the women's actions.

There is a tension between the positive and negative affects of the availability and portability affordances in many aspects of respondents' use of mobile devices. So, for example, whilst the portability affordance of mobile phones meant that women felt reassured carrying them whilst they were out at night, it also made them more likely to be a victim of crime. Women were connected with their families and friends through their mobile phones, but this also made them dependent on their devices. As we saw in the case of Nicole above, this could be seen to be impacting negatively on her capability “*to enjoy recreational activities*” in that she was theoretically willing to forgo going on holiday in order to stay connected to her devices. These tensions can

be seen as gendered. In terms of street crime women aged 14-24 are the group most likely to be the victims of phone theft (Home Office, 2014). We also saw in the section 8.4.6 *Technology related sexual violence and harassment* how women can experience gender related harassment through their use of phones. So for example Samantha was having to go through the inconvenience of changing her phone number as she felt it was the only way to deal with the harassment she was experiencing. Interviews with intermediaries also showed how mobile phones could become a means for men to control vulnerable women.

8.5 Multimediality

The last communicative affordance under discussion in this chapter is multimediality; the use of the camera on a mobile phone to take and share pictures.

Hailey was 16 and used WhatsApp to share pictures, and reported this as the primary use she made of her phone. WhatsApp allows you to view a user's phone number, so it is possible that she was using it as a means to share with people with whom she had an established relationship. Most of the women in this study were using Smartphones with relatively sophisticated cameras. Zara cited the quality of the camera as being one of the deciding factors in her choice of Smartphone.

Why did you choose the Lumia?

Good camera and good apps and it was new out at the time so I thought I'd try something different.

The digitisation of photography, and the popularity of the Smartphone has changed the way people view the communicative affordances of the photograph, leading some scholars to claim that "*images as the preferred idiom of a new generation of users*" (van Dijck, 2008). Facebook was a very popular medium for sharing images: at the

time of a report published in 2013, 250 billion photos had been uploaded to the platform, and more than 350 million photos were being uploaded every day on average (Facebook, 2013).

This section looks at the issues relating to the multimediality communicative affordance that emerged as significant themes in this study. The positive aspects of the affordance that emerged were the value of sharing pictures of women's children in maintaining family relationships. The negative aspects relate to the lack of control over photos once they had been shared on social networks, and the women's perception of the negative aspects of 'selfie' culture impacting on self-esteem and relationships. These issues could be seen to relate to two of Nussbaum's capabilities: "*Being able to use imagination and thought in connection with experiencing and producing works and events of one's own choice*" and "*Being able to have attachments to things and people outside ourselves*" (2003, p.42).

8.5.1 Positive aspects of multimediality affordance

So overall would you miss your phone if someone took it away from you? What would you miss about it?

Pictures, of her [the baby] Otherwise they could have it. That's it.

As this quote from Hannah demonstrates, the taking and sharing of photographs of children was highly valued by respondents. However some were keen to emphasise that they would not freely share these photographs online. For example, Morgan responded firmly in the negative when asked if she would share pictures of her baby on Facebook.

Research diary extract

What about showing pictures of her?

You **never** know who can get hold of that. I would never put a picture [*up on Facebook*]. I've got friends who do that with their children. I don't like it. I think it is not safe and her dad

would actually kill me.

During the interview with Courtney fieldnotes recorded the fact that we had spent a long time watching videos of her daughter on her phone. It is possible that these videos were especially significant to Courtney as she had been living away from her daughter as she was homeless and sleeping on friends' couches.

Research diary extract

Long interlude of watching videos of the baby on the phone. I manage to bring the interview back again by talking about the videos she's got on the phone.

Courtney used Snapchat and WhatsApp to share short videos and pictures of her baby with family in Australia. Price was a factor in her decision: she said that it would have cost approximately 80 pence to send a text message but as she had a data connection on her phone it was free to use these apps.

My cousin's in Australia we speak on snapchat cos it's obviously free. But it costs something stupid like 80p a text to text them.

And do you send pictures as well of her [the baby]?

Yeah

Can you send videos as well on it?

Yeah it's only something silly like 30 seconds... but it's still something.

So how do you share pictures and videos with the family?

WhatsApp.

Courtney was one of several mothers interviewed who would not upload pictures of her baby to Facebook.

Do you worry about privacy things on Facebook generally?

No.

Do you put pictures of her up?

No never have and I never will either.

Do you keep your settings private on Facebook generally?

Yeah no-one can see anything unless they're my friend: they can see my profile picture and my date of birth and that's it.

Katie was 20 and a single mum. She had a Facebook account but did not use it. She said she would share pictures on her locked Instagram account. Victoria was pregnant and maintained that she would not be sharing pictures of her baby when it was born.

And have you thought about when you have the baby - are you going to put pictures up?

I'm not going to put pictures up. A lot of my friends put pictures up but there's so many people that use the Internet and you don't know who they are, what they are, even though it is private you can still see your pictures.

Alice was happier about sharing pictures of her son and she had had two pictures of him published in magazines. Samantha used Facebook to maintain an emotional connection with her estranged sister as she used it to look at pictures of her nephew, whom she was unable to see face to face.

What do you use Facebook for?

To talk to my friends and to see my nephew because my sister won't let me see my nephew any more.

So you want to see pictures of him?

Yeah

For these women the multimediality affordance was having a positive impact on their capabilities: they were proud of their children and were happy to share pictures of them in a controlled way. As mothers, they had taken the trouble to protect their children's privacy on social networking sites. By producing and sharing these images of the children they loved their mobile phones could be seen to be having a positive impact on their "*Capabilities of Senses, Imagination, and Thought...Being able to use imagination and thought in connection with experiencing and producing works and events of one's own choice*" (2003, p.42). Yet there is a gendered aspect to women's appropriate of mobile media forms such as the phone camera: writing on this topic Lim (2014) suggests that existing socio-cultural norms about women's role in society can be witnessed in their use of mobile media.

The socio-cultural norms and expectations surrounding women's roles in society, as daughters, spouses, mothers and individuals in their own right, are as circumscribing as they are circumscribed, as can be witnessed in women's use of mobile media as they strive to fulfil both familial and professional obligations. (2014, p.2)

Rose talks about how it is part of a women's role as a mother to manage family photography: seeing this work "*as part of their everyday routines of domestic labour*" (2003, p.10). Rose was writing about the role of family photos in the maintenance of the domestic space. It is possible that, for the mothers like Courtney in this study who were insecurely housed, the multimediality affordance of their phones was especially significant as it enabled them to manage family photography even when their domestic location was unstable.

8.5.2 Negative aspects of multimediality affordance

In contrast to these positive experiences, Rebecca spoke in very negative terms about how her friends used their mobile phone cameras in their social life, and in particular about her experience of going out with a friend on her birthday.

Her Snapchat story was 300 seconds long, she was taking photos of random people and putting it on the story, like, nobody gives a shit.

Fieldwork for this research took place at a time when there was a significant amount of coverage in the UK media (Kilner, 2014) for the trend of taking self-portraits (or 'selfies') on mobile phones: a 2013 UK survey in 2013 carried out by the mobile manufacturer HTC found that 75% of 18-24 year olds interviewed had taken a selfie (HTC Blog, 2013). However, whilst the young women in this study would take pictures and share them on social media they, like Rebecca above, were keen to distance themselves from this 'selfie culture'. Ringrose argues that this affordance

contributes to the objectification of women and can therefore be seen as an example of the way in which women's identities is 'digitally gendered'.

Specific features or affordances of mobile phones, social networking sites and other communication technologies facilitate the objectification of girls via the creation, exchange, collection, ranking and display of images. (Ringrose *et al.*, 2012 p.8)

Bella identified this objectification when talking about the way one of her clients would use flattering photos on a dating site.

The photo she puts up of herself is not realistic to how she looks. It's a photo from when she was about 18 she's now a very different person after all she's went through. She was in a public space at [*the drop-in*] and she was on [*dating site*] and someone shouted out 'you don't look like that any more'. And I said 'do you think you look like that now? And she said: 'well, none of them are real'. So she does know but it doesn't stop her. Again it's just that little boost of, the quick hit of self esteem which isn't long lasting, it's not realistic.

Stephanie, who was working with women at risk of sexual exploitation, talked about the way she saw her clients taking explicit pictures to attempt to boost their self esteem.

They're just bombarded with all these images and they try and recreate that in their own little world to make themselves feel sexy to make themselves feel good and that they're giving the guys what they want. And I keep using those gender dynamics because that's what we see.

Stephanie had seen the young women she worked with sharing photographs with partners without considering the fact that they would effectively lose control of these images after they had shared them.

The thing with teenagers is that it's all about instantaneous gratification and the ability to think things through is just not developed yet. It's just 'how does that make you feel instantaneously' do you get that rush and that's pretty much what they think about. In relationships it's like he loves me they're never going to do anything I trust them. But then we also know that in adolescence relationships are very transient and very unlikely to last for a long period of time and likely to end in a dramatic way so it's about talking to young people about that and ownership of those photographs if anything goes wrong. Because once you've sent them you don't own them.

Some respondents in this study seemed to be more aware of these risks. Of the four women who talked about being “tagged” or identified in photos on Facebook, three (Jessica, Lauren and Elizabeth) had changed their settings so they had to approve the photo before it was shared. However Samantha who was 17 and at the younger end of the age range of participants was not concerned about this as an issue.

Several respondents were, like Rebecca, keen to distance themselves from a culture of taking and sharing photos. For example Amanda spoke disparagingly about young people who were paying £10 to charge their phone at festivals so they could take pictures.

I went to a festival recently and they were charging £10 for half an hour to charge your phone and some people were so desperate to have their phone on they would pay it. And that's at loads of festivals now because so many people are obsessed with taking photos now.

What do you think about that?

I think it is a bit vain. I've taken a few Selfies but some girls are addicted to them. This is one thing I think is pretty mad. When I was in year eight I wasn't worrying about how many likes I was getting on Facebook and it seems like they are obsessed with it. I feel sorry for them, like go to the park not sit on your phone taking photos of yourself.

Media coverage of selfie (taking of self portraits with Smartphones) culture was a useful starting point for a fieldwork conversation about the multimediality affordance with Victoria.

Do you take pictures much?

Yeah

But you don't share them online?

I put the odd ones like of yourself or like me and my partner but not the extreme where every five minutes there's a new picture or a new status.

So you're not a selfie addict?

No I'm completely the opposite

[This led into a broader conversation about how the research was confounding popular stereotypes of women her age always being on their phones and addicted to Facebook, and how I was finding a range of experiences.]

Do you think there's a range?

There are those people that take pictures every five minutes and they're like dolled up and whatever. But then there's a lot of people like myself who people *assume* [emphatic] we're like that.

Does it annoy you?

Yeah. When you get put in that picture but no-one knows anything about you but you're just put there and that's not me, I'm not really like that.

This conversation with Victoria about the range of women's use of the multimediality affordance of the mobile phone shows the diversity of young women's experiences. It also demonstrates how media stereotypes of young women being obsessed with taking pictures of themselves can seem inaccurate and offensive to some young women. These stereotypes were exposed by Burns in her analysis of the discourse in anonymous reader-generated comments that were written in response to online articles discussing selfies. She found that these comments were typified by sexist attitudes, which expressed contempt for the women taking these photographs.

...the selfie is discursively constructed as a gendered practice, which enables it to be devalued through an assumed association with feminine vanity and triviality. (Burns, 2015, p.1718)

Burns suggests that this contempt is a means of 'disciplining' and stigmatising young women.

Besides legitimizing the expression of contempt for others, in particular the criticism of young women, I argue that the discussion of selfies has a disciplinary effect, as the prescription of practice—a multitude of tips, prohibitions, and the ridicule of subjects who do not follow the rules—also extends to the construction and control of subjects. By repeatedly devaluing selfie takers, the discussion of selfies not only acts as a cloaked expression of sexist attitudes but also defines and stigmatizes a specific group of subjects. (*ibid.*, p.1717)

The analysis of the data on the multimediality affordance shows how the taking and sharing of photographs can make a positive contribution to women's emotional and creative capabilities, especially for young mothers sharing pictures of their children.

However the interviews with youth workers provide a different perspective: showing

how sharing pictures can also play a role in negative experiences of relationships in a way that is undoubtedly influenced by gender dynamics. These gender dynamics are also at play in the negative attitudes to selfie takers described above. This could be seen to be having a negative impact on young women's capabilities to have "*the social bases of self-respect and nonhumiliation; being able to be treated as a dignified being whose worth is equal to that of others*".

8.6 Discussion

Victoria's perception that there was a range of practices of mobile phone use amongst young women demonstrates a limitation of this study. Within a small sample of thirty women it is challenging to surface the commonalities and overarching themes that emerged when looking at the communicative affordances of the device and their effect on women's capabilities. Nevertheless it is possible to identify certain key themes that were significant and make a judgement on how they might be experienced in ways by this group of women, which might differ from the broader population.

Regarding the portability affordance, it is clear that this is particularly beneficial for homeless women and for women who are insecurely housed as a means to maintain contact with support networks. However this should be considered in relation to issues with charging phones and battery life discussed in the previous chapter. The portability affordance is also perceived as a means for women to stay safe when out at night. As there is an identified link between poverty and crime (Webster and Kingston, 2014) this is particularly relevant to women in this study. Yet paradoxically the portability affordance can also make women more likely to be a victim of crime since

women aged 14-24 are also the group most likely to be the victims of phone theft (Home Office, 2014).

The availability affordance was also a means for women to maintain relationships and get emotional support. Some women also used the affordances of particular platforms and communication modes to maintain emotional boundaries. Yet support workers also spoke about how the availability and multimediality affordance led some women to experience technology facilitated sexual violence. Finally the multimediality affordance enabled young mothers to share pictures of their children in a relatively safe and structured way.

There were practices that could be identified as gendered. For example the fact that women's use of the phone was dominated by these communicative, social affordances is in line with the gender differences in communication identified by Baron and Cohen (2012). We also saw how women were using the multimediality affordance of their devices to take pictures of their children; work which Rose sees "*as part of their everyday routines of domestic labour*" (2003, p.10).

Regarding the capabilities relating to the overall communicative affordances of the platforms, it could be argued that the way that women experienced communicative platforms such as Facebook was in contradiction to Nussbaum's central capability of "*Control Over One's Environment*" (2003, p.42). If we understand digital spaces such as Facebook as being part of respondents' environment, it is arguable that women's feelings that they were 'having' to respond to notifications suggest that they were not in control of it.

In relation to all the communicative affordances of the mobile phone a tension emerged between women's reliance on their devices and resultant vulnerability, and the positive connections they were seen to be facilitating. So, for example, in relation to the portability affordance women felt more confident being out at night when they had a mobile phone with them, but were also then vulnerable to mobile phone theft. Respondents valued the availability affordance for the emotional connections this allowed them to maintain with friends and family, but other women were challenged to maintain emotional boundaries when using their phones. Finally we also saw how the multimediality affordance provided a means to share pictures of children with absent relatives, but was also a way in which some young women were making themselves vulnerable by taking explicit pictures or using inaccurate images on dating sites.

9 DISCUSSION AND FUTURE RESEARCH

This final chapter looks at all of the findings of this research, assessing responses to the four research questions and exploring the contribution of this research to the literature and data in four areas:

- Mobile phones and social exclusion
- ‘Gendering’ research on mobile phones and digital technologies
- Capability approach and technology
- Affordances and technology

Finally the overall conclusions of this research are described.

9.1 Research questions and findings

The findings of this research in response to the research questions are briefly summarised below: firstly the impact on women’s capabilities of specific affordances covered in each chapter and then the overall impact on capabilities.

9.1.1 Impact of affordances

RQ2. How do the instrumental affordances of mobile phones affect the capabilities of 16-24 year old socially excluded women?

Respondents were making some positive use of the instrumental affordances of mobile phones to address issues of social exclusion relating to work, health, education and housing. So, for example, some women were able to look for housing and work opportunities on their phones, thus fulfilling the capability of “*Having the right to seek employment on an equal basis with others*” (Nussbaum 2003, p.42). Other women were accessing health information and fulfilling the capability of “*Being able to have good health, including reproductive health*” (Nussbaum 2003, p.42). However

the affordances of mobile devices: their small screens and limited text input functionality meant that it was very challenging to use phones to apply for jobs. The structural inequality experienced by young women was also an issue in that women in this study had employment and access to apprenticeships in roles such as childcare that are poorly paid and attract more women. Other affordances also negatively impacted on women's capabilities in this area. For example, the maintenance affordance of paying for phone credit meant that some women were challenged to use the phone for instrumental purposes such as looking for work. The availability affordance of sharing information on Facebook on the phone was also a challenge in terms of protecting sensitive information from employers, an issue described as 'context collapse'.

Despite the convenience of the device, overall the use of mobile phones by women in this study was not making a significant impact on their capabilities to address inequalities they were experiencing in relation to issues of social exclusion associated with work, health, education and housing.

RQ3. How do the maintenance affordances of mobile phones affect the capabilities of 16-24 year old socially excluded women?

The findings in this area were unexpectedly significant in both aspects of the maintenance affordance discussed: the cost of maintaining the phone and the resources required to mend broken phones. The original research design (see Appendix 1 for the interview guide) included questions on the financial aspects of paying for mobile phones, but the extent to which women were experiencing financial problems related to mobile phone use was not anticipated. 12 respondents (40%) reported financial

problems associated with their phones, including broken contracts, being unable to afford credit or exceeding their call allowances.

Women in this study were paying a ‘poverty premium’ for their phones, with some paying as much as 15% of their income on contracts. This experience was in some instances related to gender, as some women were paying off contracts for ex-partners. Navigating complex assemblages of mobile phone contracts, operators and devices left women feeling powerless. Some women had problems with playing music they perceived as ‘owning’ on their mobile phones, illustrating a limited comprehension of the complexity of the systems by which music is licensed for playback on mobile devices.

The issues of battery life, repair and maintenance were not covered in the original research design but also emerged as significant themes during research, as women often cited these problems as one of the main things that frustrated them in their day-to-day use of their phones. This was both because of the perceived fragility of Smartphones and the fact that respondents lacked the financial resources to pay for repairs. Many women cited the vulnerability of modern touchscreen Smartphones as one of the negative aspects of these devices: comparing them with the more robust Featurephones they had grown up with. Other maintenance issues included problems with battery life, especially for the homeless women in this study. All these issues could be seen as compromising Nussbaum’s central capability of “*Being able to hold property (both land and movable goods), and having property rights on an equal basis with others*” (2003, p.42).

These maintenance issues – of financial maintenance, broken phones and poor battery life – contributed to a significant theme of intermittent connectivity for the women in this study. This intermittent connectivity fundamentally alters the potential for a mobile phone to impact on an individual's capabilities to lead lives they value. On a personal level it means women lose access to support networks, and it also affects their ability to use their phones for instrumental purposes such as looking for work or housing.

RQ4. How do the communicative affordances of mobile phones affect the capabilities of 16-24 year old socially excluded women?

This final research question looked at three different aspects of the communicative affordance of the mobile phone: portability, availability and multimediality. This communicative affordance was the most heavily used, with women stating that the ability to stay in contact with friends and family was the most valued function of their phone. This communicative affordance contributes to the capability of "*Being able to have attachments to things and people outside ourselves*" (Nussbaum 2003, p.42). This section was grounded in a discussion of the literature on young people and social networking sites as these sites were very popular with respondents and often dominated their use of their phones. However this literature and analysis of data seemed to indicate that communicative uses of the phone may not be impacting positively on women's life chances, as they were using them to maintain contact with existing 'strong ties' rather than developing their networks of weak ties.

The portability affordance was clearly beneficial for the nine homeless women in this study and was also perceived as a safety mechanism for women when they were out at night. This could be seen to be fulfilling the capability of "*Bodily Integrity. Being able*

to move freely from place to place". However crime statistics cited in this section showed that young women are most likely to be victims of mobile phone theft.

The availability affordance meant that women were able to communicate through a variety of channels with friends and contacts, often using the affordances of a particular platform to manage their social relations. However we also saw how some women perceived social networking sites and the availability affordance as a source of conflict and miscommunication. The multimediality affordance of the mobile phone was perceived in a positive way by respondents who had children as a way of sharing photos of their children. Issues of technology-facilitated sexual violence and harassment were not discussed directly with respondents, as it was not considered appropriate. However interviews with intermediaries revealed that the availability and multimediality affordances of the phone meant that vulnerable women could be subject to violence, harassment and control by abusive partners.

9.1.2 Mobile phones and capabilities

This leads us to the overall research question:

How does the use of mobile phones by 16-24 year old socially excluded women affect their capabilities?

The lives of the women in this study were inextricably entwined with their phones: all the women who were interviewed had a mobile phone. Even those women who were not using Smartphones, and made a point of sharing their distaste for this culture were using Featurephones. For all the women interviewed mobile phones were part of the 'resources' that might affect their capabilities, but we shall see below how different conversion factors impacted on this process.

For the women in this study who were homeless (nine women), or socially isolated because they were at home with small children (eight women), their mobile phones were a vital means to access emotional and social support, fulfilling the capability of *“Being able to have attachments to things and people outside ourselves; to love those who love and care for us”* (Nussbaum, 2003, p.42). We saw above how women were able to use their phones to a degree for instrumental purposes, for example by seeking work and fulfilling the capability of *“having the right to seek employment on an equal basis with others”* (*ibid.*).

Yet the maintenance affordances of the phone severely hampered respondent’s capabilities overall, and were a source of financial problems in many women’s lives. The maintenance affordances of having to charge and repair phones are a nuisance for most people, but for women who are insecurely housed and on limited incomes these problems are more challenging. Given that more than half of respondents had no computer their mobile phones were their main means to get online. This suggests that the problems caused by these maintenance affordances can lead to digital exclusion, with its associated potential negative impacts on life chances.

9.1.3 Capabilities and conversion factors

The table below summarises the impact of the use of mobile phones on respondent’s capabilities and highlights the conversion factors which are particularly relevant to each capability. These conversion factors enable a person to transform a resource such as a mobile phone into capabilities, which may then be realised to achieve functionings (realised achievements and fulfilled expectations). These conversion factors are typically categorised as personal (such as skills and intelligence), social

(such as public policies, social norms, discriminatory practices, and gender roles) and environmental (such as climate or geographical location).

In the context of this research the environmental factors were not particularly relevant, but highlighting relevant social and personal conversion factors illuminates the implications of this research for policy makers. For example, in the context of ownership of a mobile phone, the capability of “*having property rights on an equal basis with others*” (Nussbaum, 2003, p.42) was negatively impacted by women’s experiences of being confused by their mobile phone contracts. This suggests a social conversion factor of policy interventions by telecoms regulators to ensure that mobile phone companies are obliged to make the cost and terms of their contracts more transparent.

This table below also highlights how mobile phone use did not impact on certain capabilities. This absence emerged early on in research, as shown in *3.4.1 Designing and modifying the interview schedule*. A question about political engagement using a mobile phone was dropped from the interview schedule after it became clear from early interviews that this was not an issue that was relevant for this group of respondents. This suggests that the capability of “*Being able to participate effectively in political choices that govern one’s life; having the right of political participation, protections of free speech and association.*” (ibid.) was not impacted by use of a mobile phone. But this is more likely to be reflective of broader political disengagement in the UK: described by Henn and Oldfield as a “*deepening disconnect between young citizens and formal politics in many advanced democratic states*” (2016, p.1).

Table 19. *Impact on capabilities*

The Central Human Capabilities (Adapted from Nussbaum, 2003 p.42)	Positive impact	Negative impact	Significant personal & social conversion factors
<u>2. Bodily Health</u> : Being able to have good health, including reproductive health; to be adequately nourished; to have adequate shelter.	Accessing health and housing information.	Concerns about health impact of mobile use	<u>Social</u> : Ensuring digital health information is accessible, accurate, works properly on mobiles. Affordable housing for young people. Research on health risks of mobile use disseminated to young people.
<u>3. Bodily Integrity</u> : Being able to move freely from place to place.	Accessing travel information and tickets. Feeling protected by having a phone when out at night.	Risk of phone theft.	<u>Social</u> : Reducing phone-based crime.
<u>4. Senses, Imagination, and Thought</u> : Being able to use the senses, to imagine, think, and reason – and to do these things in a “truly human” way, a way informed and cultivated by an adequate education	Accessing online learning resources.		<u>Social</u> : Accessible & appropriate online learning resources for socially excluded young people.
<u>5. Emotions</u> : Being able to have attachments to things and people outside ourselves	Maintaining relationships & social networks.	Feelings of addiction to social networking & conflict on these platforms.	<u>Social</u> : Social networking platforms are safe spaces for young people to connect & maintain relationships. Apps & platforms not designed to be addictive. <u>Personal</u> : Skills to use privacy settings on social networking platforms effectively to protect personal information.
<u>7. Affiliation</u> : Having the social bases of self-respect and nonhumiliation; being able to be treated as a dignified being whose worth is equal to that of others.		Technology-facilitated sexual violence.	<u>Social</u> : Digital literacy skills to manage emotional boundaries in sexual relationships.
<u>9. Play</u> . Being able to laugh, to play, to enjoy recreational activities.	Playing games & listening to music.		<u>Personal</u> : Understanding of DRM systems’ impact on music ownership on mobile phones.
<u>10. Control Over One’s Environment</u> . B. Material. Being able to hold property and having property rights on an equal basis with others; having the right to seek employment on an equal basis with others.	Looking for work.	Complexity of mobile phone contracts disempowering.	<u>Social</u> : Digital literacy & skills training. Policy interventions by telecoms regulators. <u>Personal</u> : Budgetting skills.

This capabilities which did not appear to be affected in any way by respondents uses of their mobile phones were as follows

1. Life. Being able to live to the end of a human life of normal length; not dying prematurely, or before one's life is so reduced as to be not worth living.
6. Practical Reason. Being able to form a conception of the good and to engage in critical reflection about the planning of one's life. (This entails protection for the liberty of conscience and religious observance.)
8. Other Species. Being able to live with concern for and in relation to animals, plants, and the world of nature. (Nussbaum, 2003, p.42).

It is somewhat challenging to make a judgement on the relative importance of the capabilities affected – both positively and negatively – by respondent's uses of their phones. It is possible to argue that in terms of impact on social exclusion the most important function of the phone was to help young women look for housing or employment. However the fact that the most popular use of the phone for many women was for social networking platforms suggests that its' role in maintaining relationships and social networks was more important for respondents.

9.2 Theoretical and empirical contribution

The following sections outline the contribution of this study and suggestions for future research with a particular focus on the following fields:

- Mobile phones and social exclusion
- Gendering mobile and digital research
- Capability approach and technology
- Combining affordances and capabilities

9.2.1 Mobile phones and social exclusion

This section looks at how this research contributes to mobile communication studies, the literature on the links between social and digital exclusion, and finally on socially excluded people's use of mobile phones.

As noted in the literature review, studies of mobile phones use by socially excluded young people have been dominated by studies of college students with the notable exception of works by Gonzales *et al.* (2014) on the US and Wallis (2011) in China. This study therefore undoubtedly makes a contribution to mobile communications studies literature by showing how issues of structural inequality such as poverty and homelessness impact on poorer people's use of mobile phones. This study also is significant in that it draws attention to the resources needed to maintain the phone in a physical sense – through repair of broken phones – and how this might impact on people's ability to use their phones and stay connected. The impact of poverty is seen in the fact that 40% of respondents reported financial problems associated with their phones. This suggests that more systematic studies of mobile phone related debt would reveal this to be a broader problem outside this group of respondents. These financial issues relate to a broader issue of indebtedness and increased availability of credit that has been the subject of academic debate (Montgomerie, 2014; Langley, 2014). This study also contributes to this literature by showing how young women on limited incomes were awarded phone contracts they had difficulties maintaining. It also showed how young people on low incomes had an awareness of their credit rating.

9.2.2 Digital exclusion and the digital divide

The fact that over half of the women in this study did not have their own computer means that they could be classed as 'digitally excluded' and thus this study undoubtedly

contributes to the literature on digital exclusion. It does this both by looking at the role that mobile phones might play in helping people without computers get online, and also by looking at the links between social and digital exclusion.

Firstly, as we saw above, outside the literature on ICT for development, there has not been a significant attempt to look at the role of mobile phones in helping socially excluded people get online. This is particularly significant as government services move to digital delivery. This study showed that the mobile phones are a useful way for women to access information on issues such as work, health and housing. However we also saw how usability challenges and the affordance of the small screen and limited text input meant that it was hard to actually apply for jobs on a phone. Intermittent connectivity caused by the maintenance affordances of finance and repair was also problematic.

van Dijk claims that there is limited research on the impact of the effects of these differentials: "*Strangely enough, research of the social effects of all these inequalities of access is very scarce*" (2013, p.45). Arguably, this study is addressing exactly this issue of the social effects of these inequalities of access. This study contributes to attempts to theorise the relationship between social and digital exclusion. If we look at the findings through the lens of the distinction between access and use (as seen in literature such as van Dijk's appropriation theory (2013)), we can see that all of the women had *access* to mobile phones, but there were significant differences in the *uses* they were making of them. In the framework of capabilities and affordances these differences in uses can be attributed to the conversion factors that women have to make effective use of their devices.

The theoretical framing of this study in affordances and capabilities is novel and is unusual in this literature in that it draws on theories from HCI to ‘materialise’ our understanding of the relationship between social and digital exclusion by showing the impacts of the maintenance affordances. By showing the importance of mobile phones in every area of women’s lives (from their relationships with their families, to their ability to look for work or listen to music) this study concurs with Robinson *et. al.*’s (2015a) view of digital inequality; that it should be viewed as a form of inequality in and of itself. The mobile phone as a means to stay connected is central to the lives of women in this study.

9.2.3 Gendering mobile and digital research

This section looks at how this research might contribute to a need to ‘gender’ the digital age (Green and Singleton, 2013) and research on mobile phones. Gender effects were noted in some areas of this research, for example in the differing patterns of communicative uses of the phone and the potential for women to experience technology related sexual harassment. However the most significant gender effects are to be seen in the structural inequalities relating to women’s employment opportunities, income and the effects of young motherhood on women’s life chances. For the respondents in this study the experiences of social exclusion at a young age (be it low income employment, homelessness, unemployment or teenage motherhood) have the potential to lead to permanent negative impacts throughout their life course.

Throughout this study we have seen contradictory aspects of women’s relationships with their mobile phones. Whilst for some women their mobile phone was a desirable fashion consumer object, which in some way might be seen to be reinforcing their femininity (McRobbie, 2008) the device was much more than a fashion item, as more

than half of women in this study relied on their mobile phone for connection to the Internet. So whilst mobile phones have genderscripts (Oudshoorn *et al.*, 2004; van Oost, 2003), which might be inscribing certain gendered uses and behaviours such as “*sociability, shopping and entertainment*” (Shade, 2007 p.186), respondents’ economic and social circumstances meant that they were reliant on these devices for their Internet connection, and thus for a wide range of instrumental purposes.

In respect of the feminist theory of this study, one of the concerns of this research was to avoid “*reinforcing the stereotypes and cultural constructions we are challenging*” (Standing, 1998 p.193). We saw in 8.5 *Multimediality* how work by Burns (2015) showed how stereotypes of women and selfie culture were typified by sexist attitudes. Yet a conversation with a respondent about young women being obsessed with taking selfies led to an exchange about her resentment of these stereotypes. This shows both how pervasive these stereotypes are and how women can articulate powerful resentments of them if given space to do so.

We saw in the 6.2.2. *Extra phone contracts for partners* how easily mobile phones can become entangled in women’s relationships in a negative way, often leaving women with debts they are struggling to pay off. For example, in the case of one woman who was pregnant and working on a zero hours contract, whilst also still having to pay for an ex-partner’s iPhone. This finding in particular shows the need for further research on women’s use of mobile phones which is alive not just to gender issues but to structural issues of class and poverty. Whilst this study only looked in brief at the issue of technology facilitated sexual violence, the findings that emerged contribute to the literature in this field by showing how embedded the devices are in women’s relationships.

Although some aspects of this research might apply to all young women regardless of their social position, for example in the communicative uses of the device, there were other aspects of the findings which were inextricably bound up with the structural inequality experienced by the young women in this study such as poor employment conditions and unaffordable housing. Indeed, the fact that some young women were burdened with debts caused by taking on mobile phone contracts for partners suggest that this technology might be exacerbating the inequality they experience. This suggests that there is a need for research that not only looks at gendered use of the device, but is also informed by intersectional approaches (Crenshaw, 1991) to recognise the other axes of inequality that can impact on women's relationship with technology.

In discussing digital gender Arvidsson and Foka suggest that we need to “*re-imagine life as lived through digital technologies*” (2015, para. 3). The findings from this research show how the ‘digital lives’ of respondents were often characterised by intermittent connectivity and unstable access to voice and data, which was caused by structural inequality. This shows how women's ‘digital gender’ identity cannot be understood separately from their socio-economic circumstances.

9.2.4 The capability approach and technology

This study contributes to the existing literature on the capability approach and technology on both an empirical and a theoretical level.

Firstly, on an empirical level this study contributes to the emerging literature on technology and the capability approach, but could be seen to be novel in that it is not set in a developing country. This suggests the value of this approach for evaluating the

impact of technology in many different contexts. The sensitivity of the approach to context and gender issues is also shown to be valuable in this study. On a theoretical level the capability approach gives us normative tools to make judgements on the effect of use of a technology on women's lives. In this research statements are made about 'positive' and 'negative' effects of mobile phones on women's lives and it is the capability approach that gives us the theoretical armory to do this.

Given that this study was able to operationalise seven of Nussbaum's list of ten Central Human Capabilities (as shown in Table 19 above) shows its potential strength as an evaluative framework in studies of technology and social justice. Nussbaum herself admits that the list is general, abstracted and "*open-ended and subject to ongoing revision and rethinking*" (2005 p.42). Robeyns critiques of the very possibility of making definitive lists of capabilities on an epistemological level, arguing that Nussbaum's listing of the central capabilities includes the misplaced assumption that she can "*understand what is important for people in different contexts, and include all their concerns and interests in her list of capabilities*" (2005 p.198). Yet the strength of these findings suggests that the list is inclusive and flexible enough to adapt to different contexts and individual orientations.

However it should be noted that this study did not attempt to look at the all the achieved functionings that were impacted by access to and use of a mobile phone. So, for example, whilst we saw how mobile phones were a useful tool in job seeking and looking for housing, this study did not address whether the young women actually found a job or a house. This would have required a different research design, one which might have included a longitudinal element to follow up on individual women's progress.

9.2.5 *Combining affordances and capabilities*

This study has demonstrated the potential theoretical contribution in combining capabilities with affordances. The introduction of the idea of affordances is a means to overcome the tendency to technological determinism which has been identified in work on the capability approach and technology. Arguably this develops Kleine's (2013) idea of a 'determinism continuum' in a more theoretically sophisticated manner by showing how aspects of a technology can 'afford' or 'inhibit' certain actions.

The role of technologies such as mobile phones in the capability approach is as a resource which might be transformed by personal, social and environmental conversion factors into capabilities, which may then be realised to achieve functionings. A diagram of the relationship between resources, conversion factors, capabilities and functionings is shown in Figure 1 below, which is based on Robeyns' "*stylised non-dynamic representation of a person's capability set and her social and personal context*" (2005 p.98).

Figure 1 Capability approach

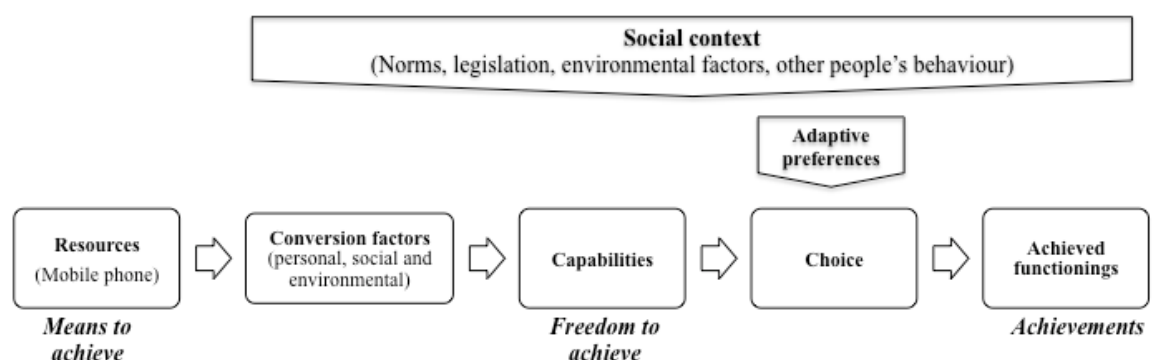
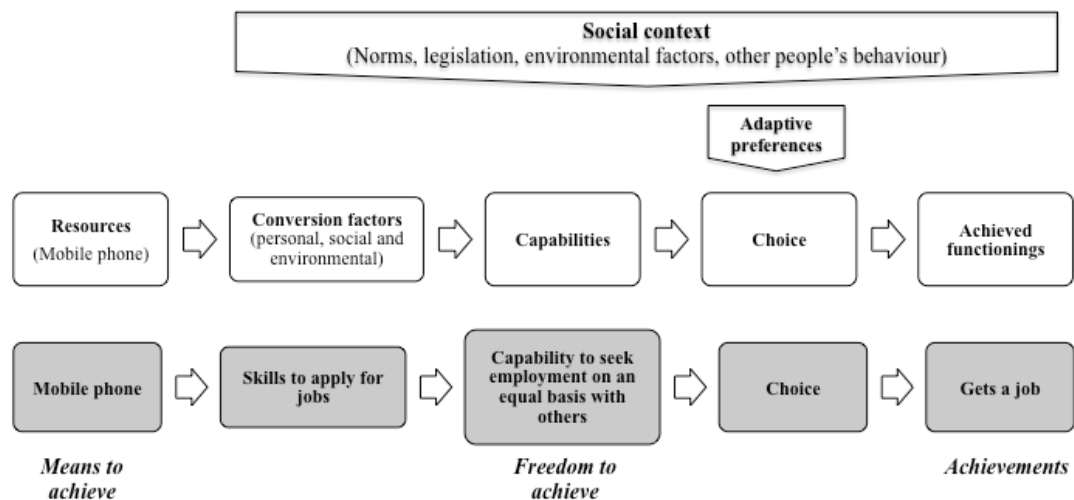


Figure 2 uses an example from this research to illustrate how this might apply to a young woman using a Smartphone to apply for a job. In this example the personal

conversion factors are the skills to apply for jobs, the capability is “*having the right to seek employment on an equal basis with others*” (Nussbaum, 2003, p.42) and the achieved functioning is the young woman getting a job. We assume that the young woman is reliant on her phone for internet access and the particular job she wants requires an online application.

Figure 2 The capability approach: Using a mobile phone to seek employment



As discussed in section 1.2.1 *The capability approach*, the weakness of this approach is that it has a simplistic view of technology as a resource: there is an implicit assumption that a mobile phone would automatically help a young woman might find a job, if she had the skills to use it appropriately and a job were available. This ignores the fact the young woman needs to maintain the mobile phone's data connectivity – by having sufficient funds to buy credit or pay her contract. Figure 3 below demonstrates this diagrammatically: showing how the affordances of a mobile phone might impact negatively on the woman's chances of getting a job.

Figure 3 Using a mobile phone to seek employment: showing role of maintenance affordances

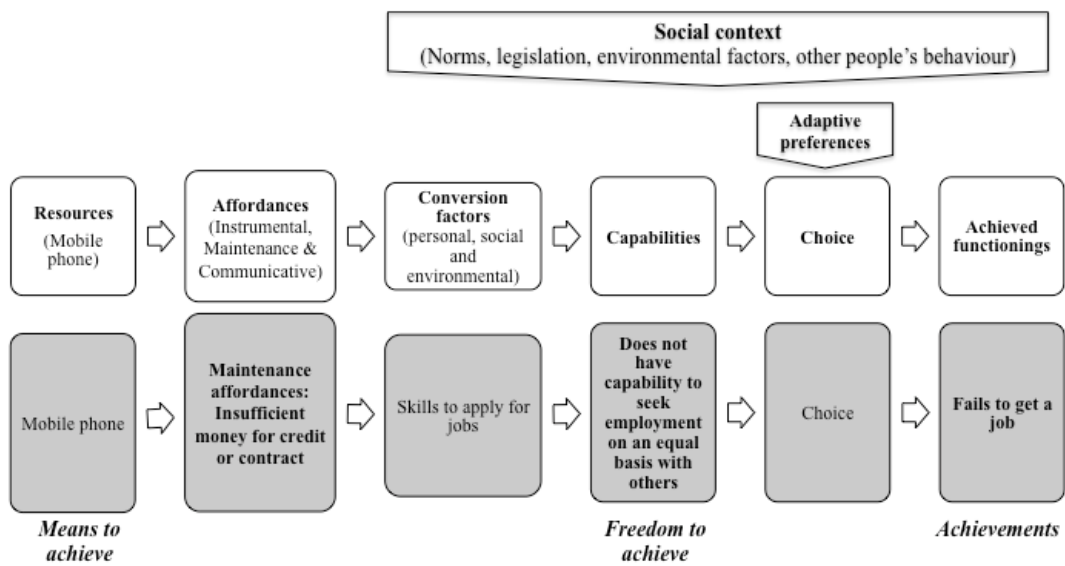
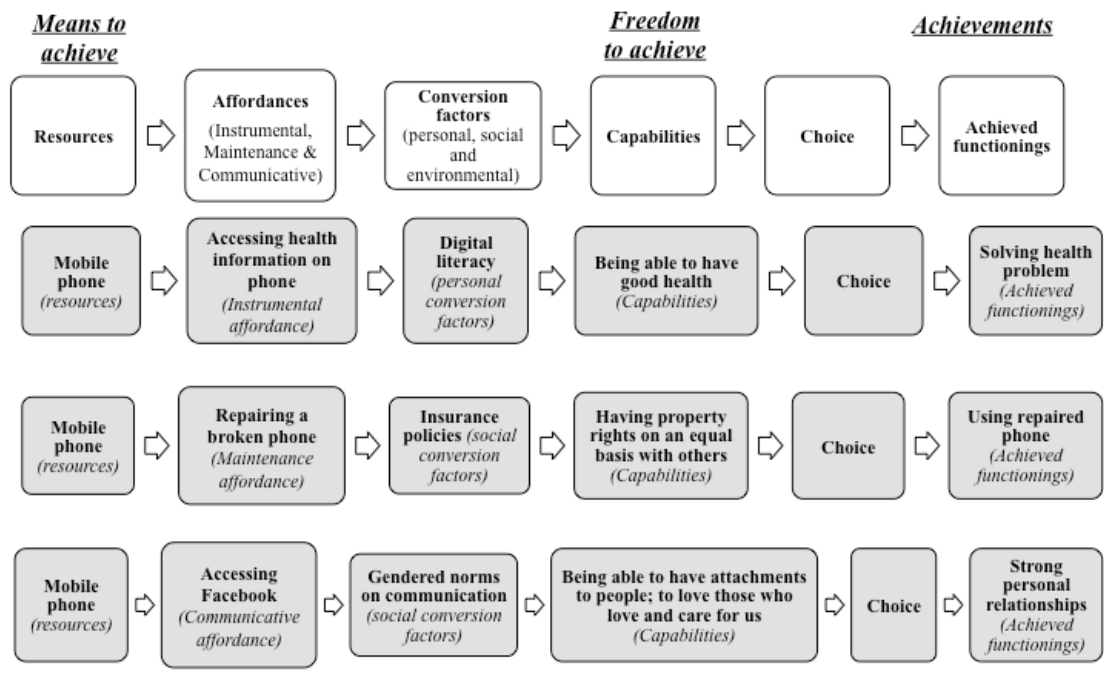


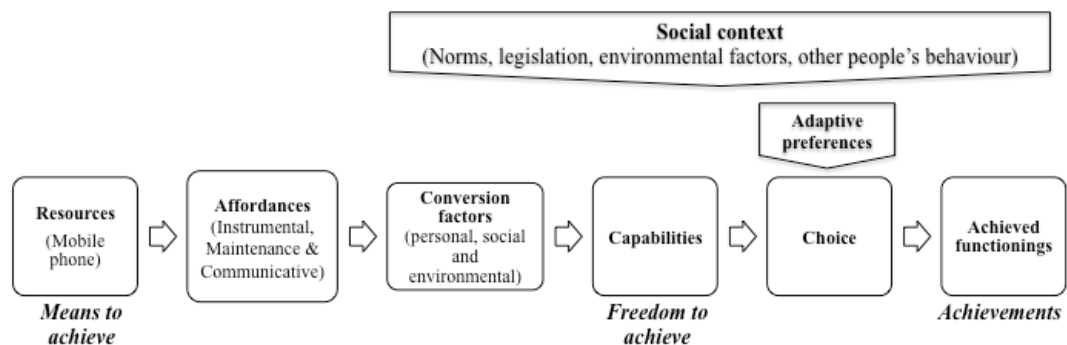
Figure 4 below shows how this model can be extended to other examples from this research, incorporating the instrumental and communicative affordances.

Figure 4 Instrumental, maintenance, communicative affordances in the capability approach



Finally the diagram below shows a simplified form of the new theorisation of capabilities and affordances. In this model, the affordances of a technology are seen to impact directly on an individual's capability to use this resource to achieve certain functionings.

Figure 5 Affordances and capabilities



The placement of affordances *in between* resources and conversion factors is key: affordances can prevent an individual making use of certain resources to achieve functionings. As we saw in the first example, the maintenance affordance of buying credit for data access might mean that a woman is unable to use her mobile phone to get a job. So whilst conversion factors such as the skills and literacy to use the mobile phone interface to use a job site on a phone are important – they are irrelevant if it is not connected to the internet. The broader implication of this model is that it is necessary to consider the affordances of a device or technology when looking at how it might contribute to people being able to lead lives that they value.

This study also makes both empirical and theoretical contributions to the cross-disciplinary notion of affordances and shows the strength of an integrative approach (Fayard and Weeks, 2014), which acknowledges both a realist and relational view. In this study both ontological perspectives on affordances can be seen to have some

traction. For example, chapter 5 *Instrumental affordances: mobile phones and social exclusion* uses a dispositional approach to affordances in which the technology of the phone (such as text input and web browsing) have clearly defined functions which are used by respondents for instrumental purposes. However we can also see throughout the findings of this research how the relational perspectives of those such as Kaptelinin and Nardi (2012), which recognise the importance of social context and broader technological assemblages, are also valid.

9.2.6 Suggestions for future research

There is potential for this framework to be tested in other contexts, with other technologies and groups of respondents. For example, the field of ICT4D (information and communication technology for development) has already seen extensive use of the capability approach as an evaluative tool, so affordance theory might be a valuable addition.

It would also be useful to test the framework with other groups of respondents such as elderly people, with other technologies such tablet computers and also to attempt to scale it up to work with larger groups of respondents. Given the strength of the integrative framework of maintenance, communicative and instrumental affordances in capturing the overall use of the mobile phone it would also be useful to test and develop it further with additional empirical studies. Finally this framework would seem to be particularly well-tuned to discussion and analysis of issues of digital exclusion and digital inequalities. We saw in the literature review that devices such as tablets and mobile phones are currently not widely considered in digital exclusion literature in Europe and the UK. This framework might be therefore represent an opportunity to understand the limitations and potentials of mobile devices in

overcoming digital exclusion, particularly in low income populations where maintenance affordances are a critical financial concern.

9.3 Conclusion

This study makes a significant contribution to the literature and data on socially excluded women's use of mobile phones. Overall this research aimed to analyse the relationship between the affordances of the mobile phone and the capabilities of the women in this study to live lives they valued. This theoretical framework was fruitful in that it allowed for normative judgements to be made on the effect of mobile phones in women's lives in relation to issues of social exclusion such as employment and health, and also captured something of the overall impact of the device on women's emotional lives. In addition, the use of the idea of affordances provided new insights into the material challenges socially excluded young people face in maintaining their phones.

The key empirical contributions are as follows.

Firstly this research provided insight into the financial impacts of the use of mobile phones on poorer members of society, both in paying for and repairing their phones. We saw how women in this study were paying a 'poverty premium', with many paying in the region of 5% or more of their overall income for their mobile phone services. This can be linked to the issue identified in the broader population by Ofcom (2015a) that poorer people are less likely to be 'active' consumers. The opacity of the techno-financial systems of mobile phone contracts can negatively impact people's capabilities, as people on limited and unstable incomes are awarded contracts they cannot sustainably afford.

This study contributes to work on gender and technology by showing how women's communicative practices on mobile phones and the consumer culture of mobile phone use are bound up with gender identity. For some vulnerable young women mobile phones are playing a role in abusive relationships. We also saw how these issues of gendered technology use should be understood against the broader socio-economic issues faced by young women.

The possible contribution that mobile phone use might make as a means to overcome digital exclusion was explored. Whilst it was undoubtedly useful for respondents to have Internet access on their mobile phones for instrumental purposes such as looking for jobs and housing, this was set against the fact that many women experienced intermittent connectivity owing to the cost of connection. Mobile phones were not seen as a substitute for computers in performing complex tasks such as filling in job applications.

The stereotype of young people as 'digital natives' was shown to be inaccurate and misleading. Some young women restricted their use of their mobile phones to accessing social networking sites such as Facebook, and others struggled with basic digital skills.

The key theoretical contributions are as follows:

- A demonstration of the strength of the capability approach as a means to theorise the relationship between technology and inequality and its applicability to contexts outside the developing world.

- The use of integrative, cross-disciplinary theories of affordances can be an effective means to understand the overall impact and use of a particular technology.
- The use of affordances in this study has been shown to be a way to overcome the potential for technological determinism in the capability approach.
- The need to link theorising on digital gender to issues of identity and structural inequality.

Throughout this study we have seen how the positive and negative impacts of mobile phone use were entwined in every aspect of mobile phone use by respondents. So whilst mobile phones were a means for homeless women to stay connected and supported by friends and family, they were also a financial drain on limited resources.

This positive and negative experience also influenced my own journey as a researcher. Having worked for many years on mobile advocacy projects, I started fieldwork enthusiastic about the potential of mobile phones to help marginalised communities, and I was happy to extoll the virtues of my Nexus Smartphone to respondents. But as fieldwork progressed this feeling of enthusiasm was eroded by the stress I heard in respondents voices as they described the difficulties of finding money for credit or contracts, and by intermediaries' perceptions of the negative impact of phones on their clients' emotional lives.

As noted in *7.3 Broken screens and fragile devices*, the screen of my Nexus Smartphone broke in the middle of fieldwork after only a year of use, and this led me to ask more loaded and critical questions about the fragility of mobile phone screens. But it had not occurred to me to abandon my Smartphone altogether until I

interviewed two Featurephone enthusiasts, Rebecca and Kayla. Rebecca's enthusiasm for her "99p Nokia" as she described it, and her critical attitude to her peers' use of phones was an inspiration. I went subsequently purchased my own low-cost Nokia Featurephone which has a battery life of a week, is seemingly indestructible and costs very little to run as it has no data capacity. This journey – from Google Smartphone to cheap Featurephone – is indicative of the broader findings of this PhD research. I find it impossible to imagine life without the utility provided by the basic functions of a mobile phone, and in particular the communicative affordances of maintaining contact with friends and family. However my research into the addictive properties of the design of social media platforms on mobile phones, and the actions of mobile operators in giving contracts to low-income women has left me wary of getting another Smartphone contract.

This research was introduced by a quote from a young woman who described how her iPhone was indispensable in her life. But, as we saw throughout this study the fact that Courtney felt that "*there's nothing I can't do on my phone*" did not mitigate the structural challenges faced by low-income young women in the UK such as poorly paid, insecure employment and a lack of affordable housing.

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APPENDICES

Appendix I Interview Guide

Introducing this research

Thanks for agreeing to do this interview for me today – I really appreciate you giving up your time to do this. I am interested in how young women are using mobile phones and iPads, particularly for things like looking for work or advice. I won't be using your real name in the research and you can decide you don't want to take part at any time and please don't feel like you have to answer all of these questions. If you want to withdraw from this study just let me know – my contact details are on the information sheet. If you want to find out what I said in my final report I'd be happy to let you know – just let me have your contact details.

Can I start off by asking you some questions about you and your life at the moment

- Do you mind if I ask how old you are?
- Are you working at the moment? What is your job? Is it full time or part time? [reassure them that this interview is anonymised]
- If not, how long have you been looking for work?
 - Are you getting benefits?
 - Do you have to use a computer to apply for benefits or keep claims up to date?
 - Do you ever use a phone to manage
- What qualifications have you got?
- Have you got children?
- Are you living on your own, or with your parents or with friends?

Now I'd like to ask you some questions about how you use computers and mobiles

- Have you got a computer at home – and if you have, do you have to share it?
- Have you got broadband at home? Is it shared? Who is paying for it
- Can you tell me about the last time you used a computer to do something practical like looking for information about benefits or work? Did you find it easy?
- Do you ever have problems getting line when you need to do things like this?
- Do you ever use public wifi – in the library or in shops or cafes?
 - If you do – how often? Why?
- Have you got a landline?
- Now I'm going to ask you some questions about mobile phones and how they have changed since they first came out
 - Do you remember the first mobile you ever had?
 - What phones have you had in the past
 - [prompt: for example did you have a Blackberry or a Nokia?]
 - Can you tell me a little bit about the way you used to use these phones:
 - [prompt: did you used to text more when you had a basic phone? Did you use BBM? When did you start taking pictures with your phone?]
 - What kind of phone have you got now?
 - Why did you choose that particular model? :
 - [prompt: Was it important that you had the same phone as your friends? Was cost important? Was it important to you what the phone looked like? What other things were important when you chose that phone?]
 - [If they are iPhone users] How would you feel about using a cheaper Smartphone that wasn't an iPhone?
 - Would you ever go back to using a Featurephone?
 - How often do you change your phone?

- [prompt : What makes you want to change your phone? Is it when a new one comes out? Or your friends getting a new phone? Or something else?]
- Have you got an iPad or any other kind of tablet device?
 - What things do you do on your iPad that you don't do on your phone?
- How many times in the last year have you changed your phone number?

Now I want to talk a bit about money and mobiles if that's OK

- How much did your phone cost?
- Are you on contract or pay as you go? Do you mind me asking some questions about how much you spend on your mobile?
 - (If contract) How much is your contract per month?
 - When you chose that contract how did you balance out voice/texts/data?
 - (If PAYG) Do you know roughly how much you spend on top-ups a week or month?
 - Does your contract or topup include mobile data?
 - Do you ever manage your mobile data costs by using the wifi on your phone
 - Do you spend more on your phone than you do on food? Or clothes?
- When you got your phone contract did you get it online or in a shop?
- How did you choose that contract?
 - Was it because you wanted the particular phone that went with it?
 - What other reasons were there for choosing that contract?
- If you got a contract in a shop, did you feel pressurised in any way – did you get all the information you needed?
- Has spending money on your phone ever caused you financial problems?
 - Have you ever gone over your contracted minutes or been unable to contact people because of money problems with your phone?
 - Have you ever borrowed money to buy a phone?
 - Did you ever have any costs associated with your phone that you weren't expecting – for example, did you ever sign up for an insurance contract without wanting to?
 - [If appropriate] Did you use a payday loan company like Wonga to borrow money for your phone or borrow money that you found it hard to pay back?

I'm going to ask you some questions about how you use your phone to communicate with people and do social networking

- Talk me through a typical day in the life of you and your phone
- Which app or function on your phone do you use most often to communicate with people (e.g. WhatsApp? Texting? Skype?)
- What other communication apps do you use?
- Which **Social networking** sites do you use:
 - Twitter, Facebook, Instagram? Snapchat?
 - Which one do you look at most often?
 - Which one did you last look at?
 - Why do you sign up to a new site or service – is it
 - When you first looked at Facebook was it on a phone or a PC?
 - Do you think some of these sites work better on small screens like you have on a phone than others: if so, which sites?
 - Does the way that sites look on phone screens stop you using them?
- What do you use for sharing pictures on your phone? Instagram?

Now I'm going to ask you about how manage your personal settings and information

- Some people have a problem with the way that companies like Facebook keeps information and images private:
 - How do you feel about that?
 - Did you know that companies like Google and Facebook share information about you with other companies – this is how you get adverts targeted at you on your timeline – does that bother you?
 - Do you feel that you are able to manage who sees what on sites like Facebook and Instagram? For example, if someone tagged you in a picture would you know how to un-tag it?

- Do you feel comfortable about Facebook being a record of lots of things you have done in your life – would you be happy for an employer to look at your timeline? Or an elderly relative?
- If you don't feel comfortable about that – what would you rather that they didn't see?
- Do you know how to keep the information on your phone private and secure? For example, do you know how to remotely wipe your phone if it gets stolen?
- Do you find it easy to know where information is stored on your phone and how it organises your contact list?
- Can you block people you don't want to talk to or IM you?
- Passwords are needed on lots of websites now:
 - Do you use different passwords for different websites – or the same for most sites?
 - Do you ever share your password with people?
 - Do you know how to create secure passwords?
 - Do you password protect your phone?
 - Have you ever been blocked from a site you really needed to access because you forgot your password and couldn't get a new one?

Now I'm going to ask you some questions about using apps on your phone

- Can you tell me about an app you find difficult to use on your phone – and explain what it is about the app that you didn't like using?
- What was the last app you bought or downloaded?
 - Do you ever buy apps?
- What app do you particularly like using, and what do you like about using it?
- What's the most useful piece of information you got from your phone in the last week?

Now we're going to talk about practical uses of your phone

Health and fitness

- Have you ever used your phone to get health advice in confidence?
- If you are comfortable telling me this, can you give me any examples of when you have used an app on your phone to get health advice? For example, do you use a menstrual calendar app?
- Do you use any fitness apps? Or diet apps?
- Do you feel more confident being out at night with your phone or without your phone, for example – would you take it to a club with you or would you find it a liability?
- How might you use it at night if you thought you might be in danger?
- Do you ever feel that having a phone with you makes you more vulnerable in public spaces and if so can you give me an example?

Support and advice

- Did you ever use your phone to get support for practical issues - either directly through phone or access to information you found on your phone?
 - Housing – what did you do?
 - Legal issues – what did you do?
 - Financial issues or debt – what did you do?
 - Do you think your phone can help you save money or does it make you waste money?
- Do you use your phone to get travel information – for example do you use the Brighton bus ticket app or bus information app? Or have you looked for a hotel or a flight?

Education and work

- Are there any things you do on your phone to make money – like buying or selling stuff on ebay, etsy or gumtree?
- Do you use your phone to look for work? Have you ever applied for a job using your phone?
 - Do you know about the Youth Employability Service app? Have you used it? If you have used it, did you find it useful? Was it easy to use?
- Do you use mobile banking? If so, are you confident that it is secure?
- When did you first get access to computers at school? Did you use a computer to

- If English isn't your first language, do you ever use your device for learning English or finding out the meaning of words you are unfamiliar with?
- Do you ever use your phone to access training information? Or do courses online?
- Do benefits advisers/agencies use the phone to contact you about unpaid work or work that you don't feel is suitable? How do you handle that?
- If you're in education- is the college using your mobile to keep in touch with you?

Life and love

- Do you use it for reading books/magazines?
- If you're a parent – do you ever look at parenting sites like Netmums or Mumsnet on your device?
- Would you use dating sites on your phone?
- Do you ever use your phone to participate in political activities or join other groups – for example, signing petitions, or by joining campaigns on Facebook?
- Or to support a band or a kind of music that you like?
- Do you play games on your phone – if so, which ones?
- Do you use your phone for listening to music? Or watching films or TV through apps like iPlayer
- Do you ever download music using your phone?
- Have I missed out anything that you also use your phone for?

And finally...

- If I took your phone away from you for a week, what would you miss most about it?
- What do you love about your phone?
- What do you just hate about it?
- Do you feel like you control your phone or does it control you?
- I've just landed here from Mars: can you explain to me what a Smartphone is and what you use it for?

Appendix II Respondent names and profile

The tables below show the pseudonyms and baseline data captured for respondents, and for the intermediaries who were interviewed.

Pseudonym	Housing situation	Parental status	Type of phone	Age	Employment status	Computer ownership
Sandrine	Homeless	No child	iPhone	21	Working part time	No computer
Alexis	Private rented	Child	iPhone	19	SAHM (stay-at-home-mother)	No computer
Hannah	Has child and has housing problems	Child	iPhone	21	SAHM	No computer
Ashley	Living with parents	No child	Samsung S4	24	Working part time	Has own computer
Madison	In supported accommodation	No child	iPhone	17	In education	No computer
Samantha	Living with parents	No child	Samsung S4	17	Unemployed	Has own computer
Kayla	Homeless	No child	Featurephone	20	Unemployed	Has own computer
Sarah	Living with parents	No child	Samsung S3	16	Unemployed	No computer
Alice	Private rented	Child	iPhone	21	SAHM	Has own computer
Jessica	Homeless	No child	Galaxy Ace	21	Unemployed	Has own computer
Megan	Living with parents	No child	iPhone	23	Unemployed	Has own computer
Tanya	Homeless	No child	iPhone	17	In education	Has own computer
Brittany	Has child and has housing problems	Child	Galaxy Ace	22	In education	Has own computer
Morgan	Has child and has housing problems	Child	Galaxy Ace	23	SAHM	No computer
Lauren	Nightstop	No child	iPhone	17	Working full time	No computer
Elizabeth	Data unavailable	No child	Galaxy Ace	20	Unemployed	Has own computer
Courtney	Homeless	Child	iPhone	20	SAHM	No computer
Victoria	Pregnant and has housing problems	Pregnant	iPhone	23	SAHM	Has own computer
Zara	Homeless	Pregnant	Featurephone	Data unavailable	Unemployed	No computer
Katie	Has child and has housing problems	Child	iPhone	20	SAHM	Has own computer
Hailey	Data unavailable	Child	iPhone	16	SAHM	No computer
Melissa	Living with parents	No child	Galaxy Ace	16	In education	Shared computer
Amanda	Nightstop	No child	iPhone	17	Working part time	Has own computer
Rachel	Homeless	No child	Other Smartphone	23	Unemployed	Has own computer
Nicole	Pregnant and has housing problems	Pregnant	iPhone	22	Unemployed	No computer
Rebecca	Private rented	No child	Featurephone	22	Unemployed	No computer
Amber	In supported accommodation	No child	iPhone	21	In education	No computer
Emma	Data unavailable	No child	iPhone	20	Unemployed	No computer
Jordan	Living with parents	No child	Samsung S3	19	Working part time	No computer
Caroline	Data unavailable	No child	Featurephone	24	Unemployed	Computer

Intermediaries

Amy	Housing advisor
Bella	Youth support worker
Emily	Youth employment advisor
Stephanie	Youth worker working with women and girls at risk of sexual violence

Appendix III Research participant consent form and information sheet



Mobile phone research Becky Faith

QUALITATIVE RESEARCH CONSENT FORM:

Participant serial number:	
HREC reference number	AMS 14435

Consent to be interviewed by Becky Faith: Please initial boxes below

I confirm that I have read / had read to me the leaflet, about this research project and I understand the content.

I understand that my participation is voluntary and that I am free to withdraw at any time, without giving a reason.

I understand that the interview will be recorded and written out word-for-word later. The recording will be securely stored in accordance with the Data Protection Act.

I understand that anything I say will be treated confidentially and only used for research purposes, in accordance with the Data Protection Act.

I agree to take part in this research study

If you wish to withdraw from the study please quote your participant serial number that can be found on the top of your copy of this form.

<input type="text"/>	<input type="text"/>	<input type="text"/>
Name of participant	Date	Signature
<input type="text"/>	<input type="text"/>	<input type="text"/>
Name of researcher	Date	Signature



Mobile phone research

HREC reference number

AMS 14435

Becky Faith November 2013

My name is Becky Faith and I'm a PhD student at the Open University. I live in Brighton. My research is exploring the ways in which young people are using mobile phones, Smartphones and other devices like iPads.

I've had a DBS check – this is like a CRB check and it means that I have clearance to work with young adults. I'm taking some notes and having a chat with some of you about how you use these devices.

Your contribution will be anonymous so I won't be using your real name – this means no-one will know that you have said the things you say and I will be destroying the data after I have written up my research.

If you decide afterwards that you don't want to contribute to this research after all I will be happy to remove your information. If you wish to withdraw your information at any point that's absolutely fine – just let me know the your participant serial number that can be found on the top of your copy of the consent form. If you would like to read what I have written I would be really happy to share it with you. If you have any questions please call me on 07799 004352 or email me on becky.faith@open.ac.uk

All the best

Becky Faith