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Exploring Children's
Social and Moral Behaviour in a
Technology Context

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Exploring Children's Social and Moral Behaviour in a Technology Context

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Abstract

The central argument of this thesis is that disclosure of certain information via computer-mediated communication technologies influence specific behaviours in relation to trust, and betrayal for children and young people.

The main aim of this thesis is to extend the computer mediated communication literature by investigating young people's use of digital communication devices in an effort to explore interactions between methods of computer mediated communication and young people's subsequent social and moral behaviour.

The thesis begins with qualitative analyses of data gathered via focus groups to raise a broad range of issues important to the young user rather than the issues deemed important by parents and educators. Young people indicate clearly that they are aware of the safety issues that concern parents and academics eager to protect them from predators. Whilst the single most popular reason they identify for engaging with technology is to communicate, they identify three key areas of concern related to technology use; usage preferences, positive aspects of technology use and negative aspects of technology use. The topics relating to the latter two themes combine social and moral behaviours forming a preliminary framework for understanding behaviour within the HCI agenda.

Subjective and objective methodology is implemented, typically via questionnaires and content analysis. In depth examination and assessment of those concerns deemed important to the young user is achieved via questionnaire studies developed from the issues raised in the focus groups. Building upon the preliminary framework identified in the first study, the thesis employs a questionnaire study to examine whether technology has an impact on trust by young people and how any betrayal of trust might impact on their subsequent behaviour. The questionnaire studies reveal that for young people dynamics of trust and forgiveness are functions of both type of medium chosen to convey information, as well as the recipient to whom the information is related. Further investigation confirms that similar elements exist for older users communicating via digital communication technologies. Subsequent investigation reveals that as young users of computer mediated communication adopt each new alternative communication medium, they then manipulate that new medium to fit their communication needs by using them in such a way as to enhance the speed and quality of communication.

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Declaration

I declare that the work contained in this thesis has not been submitted for any other award and that it is all my own work.

Name:

Signature:

Date:

"When the life of people is unmoral, and their relations are

not based on love, but on egoism, then all technical

improvements, the increase of man's power over nature,

steam, electricity, the telegraph, every machine, gunpowder,

and dynamite, produce the impression of dangerous toys

placed in the hands of children." — Diary of Leo Tolstoy

(1828 - 1910)

Chapter 1

1.1 INTRODUCTION

The aim of this chapter is to introduce the reader to the area under investigation and outline the omissions in the literature that this thesis seeks to address. Chapter 1 outlines the increasing contribution of technology to the world of communication and offers an overview of the area under scrutiny within this thesis. Not since the invention of the telephone has there been such fevered debate on the implications of computer mediated communication. This chapter will introduce the ubiquitous nature of the digital device. It will outline ease of access to technology, as well as the possibility afforded to young people, born into a world where adopting technology to communicate is the norm. The chapter also considers the conflicting views outlined in the scientific literature, of the benefits of computer mediated communication. Moreover, this chapter will make reference to the importance of internet for young people's communication patterns and alludes to UK Children Go Online (UKCGO), Livingstone & Bober's (2005) survey which addresses demographics, dangerous content and parental control. A clearer view of Livingstone's (2005) UK Children Go Online (UKCGO) internet survey will be offered in chapter 3.

Chapter one outlines the omission from the literature of the social implications of faceless communication for young people as well as the dearth of literature addressing the variety of communication channels available over the Internet e.g. instant messaging, e-mail, weblogs or chatrooms, as well as the increasingly popular social networking sites. The chapter explores the current literature and asks how it is relevant to the issues important to young people interacting with technological devices whilst briefly introducing theoretical models of computer mediated communication, frameworks that will be re-visited in greater detail in chapter 2.

The statistics surrounding mobile phone use (at time of writing) and in particular SMS text messaging which demonstrate the importance of communication to young people will be briefly considered. There is also reference to the impact of communication technologies on the values and behaviour of young people. The chapter recognises that research has to this point concentrated upon value-centred design rather than the social aspects linked to changes in design. It also indicates the failure in the literature to address any moral implications for developments within the design field, focussing more on value-centred design than human values. Despite a growing HCI literature there is a dearth of research investigating implications of faceless communication and in particular any social implications for young people. Finally the chapter outlines the aims of thesis to examine the impact of digital communications media on children and young people and recognises that much research addressing these topics within the HCI community has been carried out with adult samples. This thesis seeks to address these issues by carrying out research with young people to identify views on technology use, trust, betrayal and disclosure rather than generalising results from extant literature.

1.2 Communication Technology

Technology has become a pervasive part of everyday living and the variety of communication media adopted by children far outweighs that used by adults, reinforcing the preconception that children are generally more digitally aware than adults. Prensky (2001, 2009) provides a neat description of how today's young people are 'digital natives'- the first generations growing up entirely surrounded by ubiquitous technology. There is a continual increase in the availability and use of technology by children, particularly communication technologies such as mobile phones with their short message system (SMS) and on the Internet through Instant Messaging (IM), chatrooms, weblogs and email not to mention social networking sites. Technology is not only ever-present in children's personal lives but also constitutes part of their education. Information and Communication Technology (ICT) now forms part of the National Curriculum and increasingly more lessons are delivered via interactive whiteboards with homework resources provided online through sites such as BBC Bytesize as well as school-run Intranet services.

Computer-mediated communication is sometimes heralded for its power to break down social boundaries and to liberate individuals from social influence, group pressure, and status and power differentials that characterize much face-to-face interaction. Postmes Spears & Lea (1998) point out that computer mediated communication technologies focus attention on the message, transmit social information poorly, and do not have a well-developed social etiquette. Therefore, these technologies might be associated with less attention to others, less social feedback, and depersonalization of the communication setting. Furthermore, Kiesler, Siegel & McGuire (1984) point out that generally speaking, people do not receive training in the etiquette of electronic communication. It is

easy to misinterpret the meaning of an email or text message without any visual or auditory cues to inform your decision.

Beck (2002) posits that modern individuals are expected to be in full control of their own lives, choosing, deciding and shaping their identity. For young people communication technology has provided avenues allowing the creation of many different identities. Faceless messaging and computer-mediated communication, is increasingly replacing face–to–face (FtF) interaction. Faceless messaging through SMS, instant messaging (IM), blogging, e-mail and social networking elicits an abundance of social issues faced by children for instance, personal and psychological safety issues as well as identification of values such as deception, bullying, betrayal, politeness, empathy and fairness. There is a wealth of research addressing the role of the technology and anti-social behaviour but very little examining the effects of technology on pro-social behaviour. Morand & Ocker (2003) examine politeness theory dealing with the language modifications needed in computer mediated communication maintain levels of etiquette. They describe that in essence politeness means *phrasing things in such a way as to take into consideration the feelings of others'*. Their paper discusses how recognition of the central role of face-work in social interchange can enhance the understanding of why and where emotion-work (politeness) might occur in computer mediated communication. They also demonstrate how the distribution of politeness phenomena is systematically related to status, friendship and communicative efficiency, variables of interest in computer mediated communication research.

Computer-mediated communication differs from more traditional communication technologies in that it removes the visual and aural cues available in face to face (FtF) and telephone communication. The lack of such cues alters the

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nature of communication in a variety of ways and as a result, computer mediated communication elicits social and moral issues faced by children as described above. Computer-mediated communication is no longer confined to the technical user; it is progressively replacing face to face interaction with children and young people communicating through computers and mobile phones.

According to Myers (1996) humans interact with technological systems in a variety of different environments. Prensky (2001) supports this view arguing that this is even more pertinent for children and young people. Children and adolescents are currently more easily able to access technology to communicate than ever before. Communication is the process of sharing information, including facts, desires and feelings and entails a sender, a receiver and a message (Kaplan 1991). Communication technology then, is no more than an enabler allowing discourse across the digital divide; any time, any place and anywhere. The role of communication technology within social interaction is increasingly common particularly for young people. The ubiquitous nature of technology and in particular communication technology leads to the suggestion that the increasing development and use of technological communication devices must impact upon the social issues faced by children. Issues such as trust, disclosure and betrayal for example may even impact upon the development of social and moral behaviour themselves.

Dryer, Eisbach & Ark, (1999) discuss how the design of pervasive computers affects social relations and propose a model of how pervasive systems can influence human behaviour, social attributions and interaction outcomes. This research complements the field under investigation but makes no reference to whether or not children, whose social competence is still developing, will be

influenced in the same way as adults. It may well be that social competence continues developing over a lifetime, but whether this is the case or not, research is needed to establish the impact of pervasive systems on the developing child. In 2002 Jessup & Robey predicted that pervasive technologies would extend existing social conventions and enable new ways of interacting. Evidently, their predictions were correct, in particular for children and young people.

Despite the literature addressing the implications of faceless communication within the HCI community, (Tidwell & Walther, 2002; McDaniel, Olson & McGee. 1996; Walther, Slovacek & Tidwell, 2001; Ramirez, Walther, Burgoon & Sunnafrank 2002), none investigates the social implications for children.

The goal of the current research project is to examine whether and how the changes in communication are occurring and the impact those changes have upon children and young people. Now that technology surrounds children, omissions in research must be addressed in order to determine the impact of the digital era on Prensky's 'digital natives' and the resultant social norms.

1.3 Theoretical models of Computer Mediated Communication

Early psychological perspectives on computer mediated communication offer a perception of internet communication as lacking, for example, computer mediated communication was judged as devoid of visual as well as verbal cues and therefore an impersonal and poor medium of communication (Daft & Lengel, 1986). In 1985 Kiesler, Zubrow, Moses & Geller examined emotional affect in CMC and found that people who communicated by computer evaluated each other less favourably than did people who communicated face-to-face, they felt and acted as though the setting was more impersonal, and their behaviour was more uninhibited. Their findings suggested that computer-mediated communication, elicits asocial or unregulated behaviour. Ramirez et al

(2002) argue that whilst computer mediated communication environments eliminate non-verbal and contextual information they do offer alternative mechanisms for acquiring social information about others drawing on information not available in traditional face-to face contexts. They offer five factors that might influence strategy selection in computer mediated communication, (i) communicator-related, (ii) situation-related, (iii) goal-related, (iv) information-related and (v) technology-related factors.

Culnan & Markus (1987) describe 'cues filtered out' theories arguing that individuals do not form impressions of others online because the flattening effect of the medium diverts focus away from others towards the self and the task, promoting impersonal, hostile and task oriented messages. As a result, these perspectives do not acknowledge information-seeking behaviour as a means of compensating for the structural limitations of a particular medium. In other words, the absence of non-verbal or contextual cues severely reduces the ability to acquire social information.

Further development of theoretical models of computer mediated communication led to suggestions that relationships prove difficult to create via computer mediated communication. It was argued that a reduced sense of social presence i.e. the feeling that others are involved in the communication, negatively affected relationship formation (Short et al, 1976), This phenomenon was explained as being due to reduced non-verbal cues (NVC) and auditory information. The absence of interpersonal and social context cues, which are believed to play a major role in the development of close emotional bonds, was posited as leading to inhibited communication. Research by Sproull & Kiesler, (1986) reported that communication via mediated communication is lacking and

subsequent relationships were less intimate and more aggressive than those developed in a face to face setting.

New theories of computer mediated communication were posited. The social identification model of de-individuation (SIDE) model draws on social categorisation processes to address how individuals in computer mediated communication adjust cognitively to form impressions of others with minimal information. The social identification model of de-individuation (SIDE) proposed visual anonymity was not always negative and impersonal as such, but rather the impression formation undertaken online led to construction of a socially categorized impression of another as opposed to a personal one (Lea & Spears, 1992, Spears, Postmes & Lea, 2002).

Walther's social information processing theory or SIPT (Walther, 1992, Walther & Burgoon, 1992), perceived computer mediated communication not as an impersonal form of interaction, but rather one in which users adapt in order to present and acquire social information. This model suggested that this adaptation leads to relationships needing more time to develop than face to face interactions. Similar to this is the Walther's (1996) hyper-personal perspective whereby people deliberately adapt their behaviour in order to overcome limitations of cues in computer mediated communication, selectively self-presenting, thereby facilitating desired relationships.

Walther's hyper-personal model extends the issues introduced by SIPT focusing explicitly on the processing of information sought and given online. Like the SIDE model, the hyper-personal perspective proposes that those receiving a message engage in attributional processes to reduce uncertainty making them susceptible to exaggerating attributions based on limited information. Walther

(1996) has argued that computer mediated communication provides not only for the interpersonal but the hyper-personal, a more intimate and socially desirable exchange than face-to-face interactions. According to Walther, the hyper-personal nature of computer mediated communication is enhanced when long-term future interaction is anticipated and when no face-to-face relationship exists, so that users construct impressions and present themselves "without the interference of environmental reality". Walther proposed that the de-individuating features of computer mediated communication (visual anonymity, physical isolation, and selective self-presentation), if paired with high group salience, lead to decreased perceptions of individual differences, increased adherence to group norms, and more positive impression formation. Ramirez et al (2002) argue that whilst computer mediated communication environments eliminate non-verbal and contextual information they do offer alternative mechanisms for acquiring social information about others drawing on information not available in traditional face-to face contexts.

What all these models have in common is that they propose explanations for different kinds of information seeking in response to the limited number of cues and the alternative cues they generate in computer mediated communication. It is unclear whether or not these proposals are universal or more accurately, there is scant regard to the inclusion of children as a participant base. It is highly probable that support for these theories would be found if they were tested on a younger sample but to date this audience has largely been ignored.

1.4 The Internet

Lenhart and Madden (2007) suggest that the majority of adolescents in the Western world have instant access to the Internet. This is supported by the statistic provided by World Stats as of February 2009 there were 1,574 million internet users worldwide, 24% of whom are European users.

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The Office of National Statistics report that in 2007, the Internet was used at home by 65 per cent of children aged eight to 11years and 75 per cent aged 12 to 15 years. School work was the most common activity carried out at home at least once a week for both age groups followed by looking for information about things that interested them.

In the early nineties the most common forms of interactive communication occurred online via public chatrooms and multiple user domains (MUD) however communication was restricted to being between strangers. More recently, and for young people in particular, computer mediated communication encompasses communication through socially interactive media such as SMS text messaging, email, Instant Messaging, chatrooms, weblogs and social networking sites such as MySpace, Bebo, Friendster and Facebook as well as file sharing sites such as FlickR and YouTube. Later research proposed that the Internet facilitated new connections, providing an alternative way to connect and interact with others who have similar interests or goals (Parks & Floyd, 1996, Ellison, Heino & Gibbs, 2006).

There are a variety of studies examining the importance of online behaviour, (Jones, 1994, 1997, 1998; Turkle, 1995, 2007) and the societal implications therein. There is also a growing interest in profiling user behaviours and characteristics, (Ellison, Steinfield & Lampe, 2007; Golder, Wilkinson & Huberman, 2007; Lampe, Ellison and Steinfield, 2007) but this is often from a commercial perspective. There are a variety of studies demonstrating the development of personal relationships across differing mediums, these relationships further developing and continuing offline (Parks & Floyd, 1996, Parks & Roberts, 1998, Utz, 2000).

The most popular forms of application used by children and adolescents to communicate are social networking sites. Launched in August 2003

MySpace.com was the largest online social networking portal on the web with 110 million users registered by January 2008. Most popular with users aged 16 to 24 years, subscribers were demographically split almost in half (50.2% male, 49.8% female). MySpace was the second largest destination on the web attracting 220,000 new registrants every day enabling people to communicate, make friends and share information. Despite its rapid rise in popularity MySpace was overtaken by Facebook in April 2008 who currently report more than 200 million active users.

The rapid increase in social networking sites demonstrates how children and young people today are increasingly using technology to communicate rather than adopting the traditional face-to face (FtF) approach. In 2007 figures show that social networking sites were popular for children aged 12 to 15 where over half (55%) visited these kinds of sites from home on the Internet at least once a week. Over a third of children aged 12 to 15 visited a social networking site every day (37%) while a fifth visited every other day. Girls (41%) are more likely than boys to visit these sites every day (32%) (ONS June 2009). Furthermore, 55% of children aged 12 to 15 years who used the Internet at home had created a page or profile on a social networking site, which equates to two in five of all this age group in the UK. Children aged 12 to 15years used social networking sites mainly as a communication tool for existing relationships, such as talking to friends or family. Over a third of children (36%) used social networking sites to listen to music or find out about particular bands and to browse other people's pages without leaving a message, while nearly a quarter of children (23%) used these sites to look for old friends or people with whom they had lost touch.

There is literature addressing Internet use by children. Livingstone & Bober's (2004) report, UK Children Go Online (UKCGO), offers an insight into children's use of the Internet concentrating on demographics and ease of access as well

as addressing dangerous content and parental control over, for example, children viewing pornography online. Their findings include some social benefits for children and young people who use the internet but mainly focuses on safety issues and protection from harm. There has been little focus on the social implications for children's behaviour when faced with technology or the material and content it might provide. There is also little effort to address the communication channels available over the Internet via Instant Messaging, e-mail, weblogs or chatrooms for example as well as the increasingly popular social networking sites. A thorough examination of the kinds of behaviours that young people engage in through computer mediated communication ought to be developed and would prove beneficial to the research community.

1.5 Mobile phones and SMS text messaging

As well as their increased use of the internet the increase in non-traditional face to face communication is also evident in the uptake of mobile phone technology by children and young people. The mobile telephone is currently accessible to all regardless of age, social class or culture. By the end of 2007 the number of users had risen to over 3.3billion which is equal to penetration of 49% worldwide (International Telecommunication Union 2008). According to OFCOM (2008) the number of mobile phone subscriptions in the UK stands at over 76 million, exceeding the population of 60 million with households now more likely to have a mobile service than a fixed service.

 In 2007, 56 per cent of children aged eight to 11 years and 90 per cent of those aged 12 to 15 years used a mobile phone. Sending text messages was the most common activity performed by those with a mobile phone. Over six in 10 (61 per cent) children aged eight to 11 and just under nine in 10 (87 per cent) aged 12 to 15 sent text messages at least once a week. The next most common activity was making calls, (44% of those aged eight to 11 years and 69% of those aged 12 to 15 years), (ONS June 2009).

The first recorded monthly text message total was 5.4 million in April 1998. There were 574 million person-to-person text messages sent per week across the UK network in January 2005. The number of text messages sent during the 24 hours ending at 7.30 am on New Year's Day 2009 in the United Kingdom alone was 27.8 billion (MDA 2009), an increase of 37% on the previous year. Currently, 1.4 billion SMS text messages are sent in the United Kingdom every week. Research conducted by ICM revealed that 72% of women actually prefer to use text messaging rather than talking and one third of over 65's with mobile phones use text messaging on a regular basis. SMS has firmly established itself as a form of social connection both personally and more recently as a commercial marketing tool.

There is within the literature an effort to investigate the implications surrounding the rise of mobile telephony for teenage users. Ling's (2001) study examines teenagers' mobile telephone use considering factors such as maturation and gender identity. Ling (2002) also considers how the adoption of mobile telephony by teenagers has resulted in new forms of social interaction. Ling reveals that young people regard their mobile phones as fashion statements and points out how owning the wrong type of phone can affect the young person's affiliation with their peer group. His conclusion is that 'the device is frequently used by adolescents to mark boundaries between different social groups'. Whilst his research does encompass young people's social interaction, it does not take into account any behavioural implications of the adoption of communication technologies.

1.6 Values

Clearly the ubiquitous nature of technology is impacting upon the way children are educated and entertained. To date however, developmentally there is a lack of research addressing the effects that technology might have on such important

issues as children's social development, their relationships, group membership and crucially, on their subsequent behaviour. The internet reflects 'real-life' but offers more potential for concerns due to its very nature - its anonymity, ubiquity and communication potential. Research is beginning to reveal that people act differently on the internet and can alter their moral code, in part because of the lack of gate-keepers and the absence in some cases of the visual cues from others that are used to moderate interactions with one other. This is potentially more complex for children and young people who are still trying to establish the social rules of the offline world and lack the critical evaluation skills to either be able to interpret incoming information or make appropriate judgements about how to behave online.

Given the volume of traffic, there is a natural demand to be aware of the technological impact on values and behaviour. Friedman Kahn and Borning (2002) investigate value sensitive design within technology encompassing issues such as privacy, trust and informed consent. They identify that the Human Computer Interaction (HCI) community need be aware of the ethical importance of human values within the design framework, pointing out that social systems influence technological development and new technologies impact upon individual behaviour within social systems. They concentrate upon value-centred design rather than the social aspects linked to changes in design and fail to address any moral implications for developments within design issues. Furthermore, despite the literature addressing the implications of faceless communication within the HCI community, none investigates the social implications for children.

A vital part of the social domain is the role of morals or values. Rokeach (1973) describes values as 'an enduring belief that a specific mode of conduct is

preferable to an opposite or converse mode of conduct. Little & Briggs (2005) focus on the need for understanding human values in HCI pointing out that ambient technology 'evokes a near future in which humans will be surrounded by 'always-on' unobtrusive, interconnected intelligent objects'. Their standpoint suggests concordance with this author that human values rather than value-centred design issues must be investigated. Issues such as group membership and values such as trust and privacy for example are being investigated within the Human Computer Interaction (HCI) community but not from a developmental perspective. Sillence, Briggs & Fishwick (2004) address the trust issue referring to credibility and social identity, the focus of their research being from a consumer perspective. It is clear that industry targets children as consumers, for example, Firefly [TM] 'the mobile phone for kids' is aimed at under-eights and Macy's a U.S. department store has created a website targeting teenage girls (see Tedeschi, 2005); even AOL the Internet Service Provider targets users between the ages of 13-19, seeing this demographic as a potential future market. Despite this, there seems to be a dearth of research focusing on the critical issues of trust which ought to be considered when designing technology and applications for a young audience.

1.7 Methodology

The methodology employed throughout the thesis is a combination of both qualitative and quantitative methods. Chapter 4 presents a qualitative study investigating the opinions of the young user towards the technology with which they choose to interact. The rationale behind using a qualitative approach in the first instance was to generate hypotheses to test with the initial context being purely based in discovery rather than verification. The benefits of this approach are twofold in that there the approach is useful in that it allows the researcher to consider broad range of factors, particularly in relation to attitudes towards technology. Next there is the anticipated discovery of richer information without

the research being agenda driven and the fact that this type of methodology avoids manipulation of participants in that there is no presentation of existing preconceptions held by the researcher. Focus groups in particular were chosen so that participants could choose to take part with their existing friends and peer-groups unlike individual interviews that might lead participants to feel that they are being singled out as well as socially desirable responses. The benefits of focus groups are the identification of issues important to participants as well as the opportunity to identify issues that other people may not have considered and would not have discussed on their own. The age group split in chapter 4 was initially an arbitrary split based on availability due to the constraints of working in a school environment but later analysis demonstrates a relationship to the developmental stages identified in chapter 3. In terms of analysis, thematic analysis was employed. Thematic analysis was appropriate because it minimally organises and describes the data set in rich detail. It facilitates the creation of codes allowing conceptual patterns to emerge with no preconceived ideas being present to 'colour' the data. The main criticism of this approach is that it often quantifies data but for the investigation in chapter 4, this is seen as an advantage as the aim is to determine the factors most important to young people who use technology. For the study in chapter 4 not enough prior information was available to begin with quantitative measurements and to have used an alternative method such as open-ended survey questions instead could lead to social desirability being an issue.

Chapters 5 and 6 both employ quantitative methods. The questionnaires presented in each of the chapters were created as a result of the findings in chapter 4. The aim was to construct a questionnaire that would measure trust and forgiveness and for the scenarios presented to be as generic as possible and also for them to be similar in context. In an effort to investigate peer to peer

disclosure habits with regard to trust and forgiveness and examine differences between face to face and mediated communication disclosures item generation for questionnaires was carried out by the researcher and supervisor. No pilot studies were carried out. Analysis of questionnaire data was in the form of ANOVA. This was chosen as appropriate as the studies in both chapters 5 and 6 were looking to identify differences in trust and forgiveness based upon method of communication, age of participant as well as differences in the recipient of forwarded information. Finally the methodology employed in chapter 7 is similarly qualitative in nature. In the first instance demographic information is gathered using the statistical package described above. The aim is to follow the natural progression from one-to-one communication to a one-to-many communication platform. This is followed up with conceptual content analysis as described above in an effort to investigate emerging patterns in the data.

1.8 Aims and Objectives

There is clearly a wealth of research documenting the effects of computer mediated communication for adults; as children and young people today are increasingly using socially interactive technology to communicate rather than adopting the traditional face-to face (FtF) approach, it is prudent to extend this research in an effort to address this cohort.

The aim of this thesis is to examine the social impact of digital communications media on children and young people to see whether or not interacting via new technological devices and platforms actually changes their subsequent behaviour. In particular, the research will investigate whether computer mediated communication alters the nature of communication by children and young people. The issue of whether the absence of interpersonal and social context cues (believed to play a major role in the development of close emotional bonds) inhibits communication between peers and friends will be

explored. The thesis will also address the implications of technology for patterns of disclosure and whether there are differences in those patterns dependent upon age. It will examine the ways in which computer mediated communication can influence specific behaviours in relation to trust, and betrayal for children and young people.

There does not seem to be an adequate research base from which to assess the socio-developmental consequences of children's uses of technology. There can be no doubt that interactive media offers incredible opportunities for children, research indicates that it can promote pro-social behaviour, cognitive skills, spatial skills, provide access to distant peers and resources and enhance multi-tasking ability, enriching their environment. It is also true however that much of the research surrounding children's technology use focuses on the risks attached therein, in turn neglecting entirely the positive effects that technology may have on developing identity, and on social and moral aspects of development and behaviour. It is imperative that research focuses on the role of digital communication technology as motivation to engage children and young people in social behaviours and moral decisions and behaviours. It is this omission from the literature that the current thesis seeks to address.

Chapter two explores more deeply the processes concerned with face to face communication and how these processes have been discovered to exist albeit in an adapted form, within the digital arena.

Chapter 2 Disclosure

The following chapter explains the importance of communication in the development of relationships and describes the psychological processes involved in face to face communication such as self disclosure, de-individuation and disinhibition and outlines how they are implicated in computer mediated communication. The chapter addresses how, using these processes, communication has adapted to exploit the variety of platforms available through the internet and mobile communication devices. Finally this chapter will outline the existing models of computer mediated communication, namely cues filtered out models of communication and their failure to contribute to the explanation of behaviours displayed by young people particularly when communicating via social networking sites where anonymity is absent and the development of interpersonal relationships is paramount.

2.1 Introduction

Communication technologies are tools that offer a variety of media facilitating the exchange of information. Where mediated communication is adopted then the process of communication itself must adapt to that medium. The question is whether these tools translate behaviour as easily as they transmit information and whether communication via technological device has any implications for children and young people's psychological well-being and behaviour. The main objective of this thesis is to examine the impact of communication technologies on the social behaviour of children. This chapter will describe the psychological processes involved in interpersonal communication within face-to-face settings and how they are implicated in computer-mediated communication. In this instance the process of self disclosure as well as disinhibition in a computer mediated environment will be described before the chapter goes on to outline models (alluded to in the previous chapter) offering an explanation of the processes within computer-mediated-communication. Namely, these models are the social identification model of de-individuation (SIDE Model), (Reicher 1984;

Lee & Spears, 1991, 1992); the Social information processing theory (SIPT Model), (Walther, 1993); and finally Walther's (1996) hyper-personal model of computer mediated communication. These models tried to account for the impact of reduced social presence and lack of visual cues in mediated communication. The premise of these early models was that social context cues allow correspondents to manage and adjust their behaviour according to the dynamics of the given interaction. One of the outcomes of these models is the opportunity to demonstrate extreme or uncharacteristic behaviour. Keisler (1984) suggested that the lack of social cues in computer-mediated-communication is strongly linked with anonymity and might lead to uninhibited behaviour as seen in de-individuation.

2.2 Self Disclosure

Relationships and interactions with others have a central role in one's life; furthermore, humans exist and function as social beings, holding the desire to be with others (Hogg & Vaughan, 2008). Communication in the realm of interpersonal relationships involves the increasing use of technology (Baym, Zhang, Ledbetter & Lin, 2009) and it is the advances in technology that have led to increased opportunities to both form and maintain relationships. Relationships are developed through self-disclosure. Self-disclosure is the act of revealing details about oneself to others. Originally explained by Jourard, (1958) typically self-disclosure takes place in an effort to build up and develop a relationship and has been found to be a vital ingredient in the development of intimacy in relationships (Cornwell & Lundgren, 2001). Self-disclosure performs a variety of functions, (Knapp 1984). It is a way of gaining information about another person allowing the ability to predict the thoughts and actions of those with whom one interacts and is one way of learning how another person thinks and feels. It is sharing information with others that they would not normally know or discover and involves risk as well as vulnerability on the part of the person doing the

sharing. For young people – teenagers in particular - sharing personal information can be fraught with dangers with regard to being accepted by peers (Schonert-Reichl, 1999; Bane, Cornish, Erspamer & Kampman, 2010). Self-disclosure is seen as an important part of developing a relationship in order to establish trust, (Derlega, 1993; Barak & Gluck-Ofri, 2007). Once an individual engages in self-disclosure, it is implied that the other person will also disclose personal information, an action termed reciprocity in the literature. Self-disclosure can also boost self-esteem if the other person accepts the disclosure and reciprocates while mutual disclosure deepens trust in relationships and helps both people understand each other more (Bane,et al. 2010). While there are several advantages to self-disclosure, there are also risks. The other person may not respond favourably to the information disclosed, therefore self-disclosure does not automatically lead to favourable impressions. Another risk is that the other person will gain power in the relationship because of the information they possess, (Joinson Paine, Buchanan & Reips 2007). Too much self-disclosure or self-disclosure that comes too early can damage a relationship. This has been demonstrated in the increasing prevalence of bullying in a mediated setting. E-mail, texting, chat rooms, mobile phones, mobile phone cameras and web sites can and are being used by young people to bully peers (Ybarra & Mitchell 2004; Livingstone & Bober 2005; Campbell 2005).

A variety of research has investigated the pattern of relationship formation via computer- mediated communication, (Parks & Floyd 1996; Utz, 2000; McKenna, Green, & Gleason, 2002). Findings suggest that in a computer-mediated setting, individuals are willing to disclose more information more quickly than they would do in a face-to-face setting. In computer-mediated communication the level of anonymity, distance and perceived safety, allow greater levels of disclosure to

occur more quickly than might happen in a face-to-face setting (Buchanan, Paine, Joinson, & Rieps, 2007). The shared knowledge might exist between two people or within a group or organisation online and has a variety of purposes dependent upon context (Gallegher, Sproull & Kiesler 1998). For example in personal relationships it serves to increase mutual understanding and increases trust. Because self-disclosure is often reciprocal, it serves to strengthen the relationship. Within groups, self-disclosure serves to enhance bonds between group members and strengthen group identity. This is demonstrated on social networks such as Bebo or Facebook for example where individuals are invited to join groups to support a particular cause. Self-disclosure between an individual and an organisation allows identity to be established and authenticated for example when registering with an online bank, allowing them to personalise information and tailor it to meet customer needs.

Disclosure through computer mediated communication is not universal and there is less disclosure between commercial organisations and individuals. This seems to be related to privacy and security issues with individuals having concerns about how safe their personal details will be and how they might be used. There is likely to be more disclosure between an individual and an organisation if privacy is assured, inducements such as financial reward are offered and the company is reputable (Andrade, Kaltcheva & Weitz 2002). Enhanced levels of self-disclosure are widely reported in the medical literature. In a meta-analysis of literature spanning 25 years Weisband and Keisler (1996) discovered that administering forms via computer increased self-disclosure and effect sizes were larger when compared to face-to-face interviews. They describe this as being due to the reduced social cues and ignorance of risk attached to online disclosure. Smyth (1998), reports that as well as psychological benefits, online disclosure has been associated with fewer visits

to medical centres. It has also been found that methodology designed to reduce face-to-face interaction elicit increased responses to sensitive questions. Joinson (2001) reports that when data is collected via computer-aided self-interviews, people report more health related problems, HIV risk behaviours and more drug use. It is also reported that increased social presence of the researcher leads to a reduction in the responses to sensitive questions.

Peter, Valkenburg & Schouten (2005) propose a model of online friendship formation which incorporates self-disclosure. They argue that computer mediated communication allows introverted people or those lacking in social skills an avenue to interact with others. For young people there seems to be less reticence to disclose personal information in a social network environment for example, (Dwyer, Hiltz & Passerini, 2007). Social networking sites work on the basis that they are anything but anonymous, relying on the utmost disclosure often in an effort at self-promotion. This offers a new area of research to consider as disclosure in a computer mediated communication environment has, up to this point, been examined in the context of anonymity although the increasing use of webcams will offer alternative avenues to investigate (Joinson 2003).

Self-disclosure in a computer mediated communication setting is easier than in the traditional face-to-face setting as it removes the feeling of vulnerability from the equation and also is mediated by the individual. That is to say that disclosure in a face-to-face environment is immediate and necessitates close proximity whereas disclosure in a computer mediated communication setting removes those pressures allowing the individual more control over the situation (Joinson 2003). Rheingold (1993) argues that the internet is a medium, "where people will reveal themselves far more intimately than they would be inclined to

do without the intermediation of screens and pseudonyms". Similarly Parks and Floyd (1996) found that participants reported disclosing significantly more in their internet relationships compared to their real life relationships. Wallace, (1999) also argues that individuals are more willing to disclose more information via computer-mediated-communication than face-to-face. Tidwell & Walther (2002) argue that the motive for heightened self-disclosure in computer mediated communication is uncertainty reduction. According to uncertainty reduction theory people are motivated to reduce uncertainty in an effort to increase predictability. In face-to-face interaction there are more cues available to reduce uncertainty. Tidwell and Walther conclude that the limited cues available in computer mediated communication encourage people to adapt uncertainty reducing behaviours through heightened self-disclosure. Uncertainty reduction theory offers an approach to examine impression formation and the development of relationships within face-to-face interaction which could extend to examine those factors within computer mediated communication. As well as self-disclosure, one of the interactive strategies adopted for uncertainty reduction is deception detection. Deception detection is considered to be unreliable in computer mediated communication unless individuals contradict known facts or themselves, it is unlikely that deception can be detected as freely as in a face-to-face setting where other cues are available. Tidwell & Walther (2002) reports that, "there are no clear definitions of the elements within computer-mediated-communication which lead to uncertainty reduction".

2.3 Disinhibition

Research findings indicate that computer-mediated-communication can be characterised as containing high levels of disinhibition. Disinhibition is behaving in such a manner that normal behavioural, cultural and moral constraints are disregarded. According to Suler, (2004) people do and say more things via communication technologies than they would ever dare in a face-to-face setting.

Suler describes this process as disinhibition and points out that it can be positive as well as negative. People may choose to share secrets, emotions, and personal information; they might engage in acts of kindness or generosity for example. On the other hand they might also engage in exchanges that are rude, dangerous, or illegal. Suler's findings demonstrate six factors that interact with each other in creating an online disinhibition effect: *i)* dissociative anonymity - this is the idea that because those engaged in the communication are anonymous then they are dissociated from any behaviour they might engage in; *ii)* invisibility – non verbal cues such as posture or expression are irrelevant as participants (unless they choose to do so) cannot see one another; *iii)* asynchronicity – many forms of computer mediated communication are asynchronous meaning that correspondents do not both need to be online simultaneously e.g. email, giving participants time to formulate or indeed avoid a response; *iv)* solipsistic introjections – creating features for the correspondent such as a visual image or voice; *v)* dissociative imagination – treating online interaction as a game where normal everyday rules do not apply; and finally *vi)* minimization of authority – online status has different impact than that in a face-to-face setting due to absence of visual cues therefore everyone has equal status. He also accepts that personality variables influence the extent of an individual's level of disinhibition. Joinson's (2001) paper offers support to Suler's suggestion of anonymity contributing to online disinhibition. Kiesler, Siegal & Maguire, (1984), Spears & Lea, (1994) and Walther, (1996) agree that anonymity is central to most explanations of behaviours via computer-mediated-communication.   In fact anonymity is, according to Joinson, crucial to understanding models mediated communication behaviours. Early psychological studies of the internet took place in the 1970's and models of mediated communication began to emerge (Short, Williams, and Christie, 1976; Sproull &

Kiesler, 1976) one of the first to emerge from the literature was the social identification model of deindividuation.

2.4 Social Identification Model of De-individuation

De-individuation refers to an individual's loss of self-awareness, occurring in groups that foster responsiveness to group norms, whether positive or negative (Myers 2008). De-individuation was described by Festinger in 1952 as a state where an individual becomes immersed in a group so that their individual self is lost to that group. Zimbardo (1969) reported that de-individuation required antecedent conditions: anonymity, altered time outlook, reduced sense of responsibility, sensory input overload, novel situation and altered consciousness (cited in Joinson 2003). Within the realms of computer-mediated-communication research, these conditions seem often to be met. The social identification model of de-individuation (SIDE) was developed by Reicher (1984). Within a computer-mediated-communication environment the SIDE model proposed visual anonymity was not always negative and impersonal as such, but rather the impression formation undertaken online led to construction of a socially categorized impression of another as opposed to a personal one (Lea & Spears, 1992, Spears, Postmes & Lea, 2002, cited in Caplan, 2003). The SIDE model suggests that conformity via computer-mediated-communication depends not only on visual anonymity but also the salience of a shared personal identity (Spears, Lea & Lee 1990). Hancock & Dunham (2001) describe how the SIDE model acknowledges the lack of cues afforded by computer-mediated-communication and shifts the focus to the social identity variables that frame computer-mediated-communication interactions. Furthermore, the model adheres to the cognitive processes by which humans make inferences and attributions about others on the basis of minimal information (Lea & Spears, 1992, 1995; Spears & Lea, 1992, 1994). Essentially, Spears and Lea (1994) argue that the lack of individuating cues in computer-mediated-communication

compared with face-to-face interactions (e.g., physical appearance, vocal cues, etc.) render correspondents anonymous. The major consequence of this de-individuation, defined by visual anonymity and physical isolation, is an increased reliance on the few remaining social cues on which to form impressions of the correspondent (Lea & Spears, 1995; Spears & Lea, 1994). Under the conditions described, correspondents are assumed to construct more stereotyped and exaggerated representations of one another, based on the minimal cues emerging from the context of the communication. According to Lea & Spears, (1991) these can be cues to gender, status, categorical membership, etc. as well as the correspondent's communication style, for example, word choice, or paralinguistic cues such as emoticons, capitalization, etc. More recently this model has been used to describe the importance of self disclosure in synchronous communication.

For young people, this is demonstrated in their use of chatrooms and Instant Messaging platforms as well as social networking sites. Often, these applications offer invitations to join any number of groups, from action groups, support groups and general interest groups. This is demonstrated by Dietz-Uhler, Bishop-Clark and Howard (2005) who report that self-disclosure increases over time. This further supports the social identification model, as group members are compelled to adhere to social norms and exhibit reciprocity. When de-individuated computer-mediated-communication participants perceive themselves as part of a group, the group identity is intensified and supersedes individual self-identities. The primary consequences of this social perception are strong positive feelings towards the other members and intensified attributions of similarity. Within the original SIDE model formulation, any impressions formed are presumed to reflect the operation of underlying social categorization processes (Lea & Spears, 1992). The scarcity of social and interpersonal information in computer-

mediated-communication is assumed, paradoxically, to produce more intense and exaggerated positive or negative impressions of communicative partners, depending on the social context. Blanchard (2008) argues however that such disclosures foster a sense of community, with features such as attachment membership and identity.

2.5 Social information processing theory

Social information processing theory (SIPT) (Walther, 1993, Walther & Burgoon, 2002, cited in Caplan, 2003), perceived computer-mediated-communication not as an impersonal form of interaction, but rather one in which users adapt in order to present and acquire social information and due to this, relationships need more time to develop than face to face interactions. The SIPT theory argues that computer-mediated-communication does not reduce or eliminate the rate at which impression-relevant cues are exchanged during social interaction instead the amount of such information is slowed. Correspondents are assumed to take an active role in forming impressions through text-based information. Initial impressions are presumed to be incomplete relative to those in a face-to-face setting, but they become more developed and comprehensive over time as the correspondents seek out relevant information about their partners (see Walther, 1993, 1996).

Studies have shown internet communication to be useful for those who have difficulty or problems forming relationships or have low well being due to few social contacts (Bargh & McKenna, 2004) and that computer-mediated-communication can lessen barriers to the forming of interactions, promoting increased self disclosure (Bargh, McKenna & Fitzsimons, 2002, Tidwell & Walther, 2002), allowing interactions to occur which normally would not. Those in online relationships harbouring long term goals for subsequent face to face meetings, were reported as increasing their levels of self disclosure; being more

honest, disclosing more personal information and employing both negative and positive attributes (Gibbs, Ellison & Heino, 2006), supporting SIP theory's anticipated future interaction principle. Self-disclosure has been stated as leading to intimacy in relationships, due to responsiveness of partners and enhanced feelings of being understood by the discloser (Reis & Patrick, 1996, cited in Gibbs, Ellison & Heino, 2006).

2.6 The hyper-personal model of computer mediated communication

A more recent theory proposed by Walther (1996, 1997), the hyper-personal model, extends the developmental constraints outlined by social information-processing theory within a larger framework that incorporates both the cognitive processes highlighted by the SIDE model and some of the unique features peculiar to the computer-mediated-communication environment. Walther identified three types of communication which take place online: impersonal, interpersonal, and hyper-personal. Impersonal communication is that which occurs frequently and was seen by researchers as the only type of communication that took place online, for example e-mail in the workplace, (Short et al. 1976; Parks and Floyd, 1996). Early computer-mediated-communication research focused on email which was primarily impersonal in nature and used in academic and business settings. Research at this early stage was based on assessments of online relationship development which often emphasized physical presence as an essential element, (Nardi and Whittaker, 2002). As the internet became more available researchers began to investigate the nature and development of interpersonal communication online. Emails began to be used to exchange personal and social information with friends and colleagues alike – some of whom were known on a face to face basis others who were solely online correspondents, thus the internet became a tool for developing social relationships. Walther's (1996) hyper-personal model of communication posits that computer-mediated-communication is

characterized by reduced visual, aural and contextual cues the consequences of which lead to unusually intimate (hyper-personal) communication. This theory is particularly relevant for children and adolescents engaging in computer-mediated-communication, allowing them to overcome developmental barriers such as shyness and self consciousness (Valkenburg & Peter 2009). The literature suggests that the reduced cues afforded by computer-mediated-communication encourage individuals to reveal more information and ask more intimate questions earlier in a relationship than they would in a traditional face-to-face setting, (Hian, Chuan, Trevor & Detenber, 2004). According to Walther (1996), this is an aspect of hyper-personal communication which occurs when "users experience commonality and are self-aware, physically separated, and communicating via a limited-cues channel that allows them to selectively still present and edit; to construct and reciprocate representations of their partners and relations without the interference of environmental reality"(p33). Walther (1996) describes four elements that define his model of hyper-personal communication: *i)* an idealized perception of the receiver, *ii)* an idealized self-image which is created and presented to the other through self-selection, *iii)* asynchronous channels of communication allow individuals to self-edit to a greater extent than does the more spontaneous face-to-face environment and *iv)* a feedback loop is created reinforcing idealized perceptions of both the self and other. This reciprocal process, according to Walther occurs in all relationships but it is intensified in minimal-cue interaction. Hyper-personal communication therefore produces intense and often overly intimate relationships where similarities between the two individuals are magnified and the differences are minimized. This can have both positive as well as negative results. For example, the model is useful in a therapeutic setting where individuals seek online information, education, and support. The hyper-personal nature of such groups can contribute greatly to coping strategies and offer

support. Negative consequences come from the inflated sense of familiarity between correspondents. This is an obvious means for online predators to engage children and adolescents into revealing inappropriate information via computer-mediated-communication (Livingstone & Bober, 2005).

Along with hyper-personal experiences in computer-mediated-communication there is a suggestion that hyper-negative behaviour exists there too. The anonymity that computer-mediated-communication affords offers the potential for deception, for example, fraud, impersonation etc. There are many anecdotal instances of deception reported, for example phishing (Jagatic, Johnson, Jakobsson & Menczer, 2007) and paedophiles using chatrooms in an effort to initiate contact with minors (Livingstone, 2005). Face-to-face interactions abide by a set of accepted social norms which if violated lead to a set of practical consequences such as shame, guilt and embarrassment. These then lead to behaviour modification or the breakdown of the interaction. In a computer-mediated-communication environment the anonymity afforded by that environment allow for hyper-negative behaviours without the social consequences experienced in the face-to-face environment.

Collectively, these theoretical approaches have been described by Culnan and Markus (1987) as defining a cues filtered-out (CFO) perspective. The unifying theme central to these approaches is that the reduction of regular social characteristics (non-verbal, social and relational cues) in computer-mediated-communication produces a depersonalized form of communication and decreased awareness of others, inhibiting interpersonal relations. Each of the theories presented here is a comprehensively explored domain where each seems to complement the next. The main thrust of each is the attribution of

stereotypes and rapidly adopted familiarity based on the premise of anonymity within a mediated setting and visual anonymity in particular.

Chapter two introduces and explains the existing psychological models of communication and how those models are implicated within a computer mediated setting. This chapter demonstrates that there is a clear failure of any of the current models of communication to address particular behaviours within a mediated setting. The major downfall in these models is their lack of comprehensive contribution to the explanation of behaviours displayed by young people communicating via mobile telephone, and social networking sites where anonymity is absent and the development of interpersonal relationships is paramount. It is this omission that the current thesis will explore. The next step therefore is to examine the role of technology in the lives of children and young people paying particular attention to communication behaviours. Chapter three examines the developmental contribution of technology and the lack of current research addressing the impact of digital communication technologies on young people's lives.

Chapter 3 Technology and Children

This chapter describes the ubiquitous nature of technology in the lives of children and young people and how they use it. It sets the scene for subsequent chapters' exploration of the importance of communication technology to the young user from their own perspective. The chapter reviews the literature and describes how the majority of research focuses on demographic information and the negative impact of technology on children and young people. In particular, current research addresses the fears of parents and educators rather than the views of the young people using technology. This chapter proceeds to examine the role of technology in child development as well as explaining how access to such devices can benefit rather than hinder child development in improving motor, spatial and cognitive skills as well as social skills. The crucial nature of communication to child development and the positive contribution of the variety of platforms offered to children by the internet is discussed. Finally, the chapter offers a summary of the impact the mobile telephone has had on children's lives, discovering that communication is demonstrated not only via the device itself but also of the device itself by revealing how the mobile telephone can be viewed as a multi- purpose tool offering an avenue for communicating social standing, emotional state and personal identity. This is seen in terms of the importance of the appearance of the device in generating peer acceptance.

3.1 Introduction

Following from chapter two, the thesis now explains the importance of technology in children's lives, how it impacts on their development and how communication is fundamental to this interaction. Prensky, (2001) stated that children were 'digital natives' born into an increasingly pervasive technological environment. It is true that children and young people are immersed in a technological world from birth; digital technology surrounding them twenty-four hours a day, seven days a week. Newborns are soothed with musical mobiles and entertained with movement-sensitive toys. Children's bedrooms are often multi-media centres - host to televisions and games consoles as well as

personal computers and of course the ubiquitous mobile telephone. Childwise (2008) report that 90% of children aged between 5-16 years have a computer at home. In 2008, nearly 16 million households (65%) in Great Britain had Internet access, (ONS 2009) and 99% of children aged 8-17 years have accessed the Internet (Ofcom, 2008) Furthermore, it is estimated that 65% of children between the ages of 8 and 15 years own a mobile telephone, many of which are equipped with internet availability allowing simultaneous media access. This chapter will outline the experience of children born into a technology driven world, how children's use of technology evolves and the impact of that technology on their social development and patterns of communication.

3.2 Children and Technology

Confirming Prensky's (2009) view that 'digital natives' are growing up in possession of 'digital wisdom', Tapscott (1998) observes that children today are the first generation that is truly 'growing up digital' therefore, they are said to be 'in the vanguard of a revolution in both technology and culture' (Wartella & Jennings, 2000). It has been suggested that media technologies may have a greater influence on socializing children than parents and school in contemporary society (McNeal, 1998). The majority of empirical research to date studies the amount of time children spend using interactive media, and studies the influence of violent content in video games and other interactive media on children's social behaviour. Whilst there are some investigations that reflect recent advances in interactive technology, (Subrahmanyam et al., 2001) including studies on the use and impact of handheld devices, wireless technology, and interactive toys, (Luckin et al., 2003) at the time of writing very few examine the social implications of communication technology for children and young people. Research tends to focus on a narrow area the impact of interactive technologies on children's health (e.g., seizures, addiction, and weight gain), and studies of how children interpret web environments or

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understand disclosure in order to protect their privacy. In fact, despite concern in the literature, (e.g. Cordes & Miller, 2000) little systematic research has been conducted into the impact of interactive media content on children's development. The empirical research on children and interactive media has yet to address the numerous questions posed about its effects and what research does exist is generally policy driven commissioned as a knee-jerk reaction to some kind of extreme event. A point in case is the Byron report (Byron, 2008) which was published following a request from the British government to address the growing moral panic about the dangers of the digital world, for example, children being exposed to pornography, violence, self-harm or contact from paedophiles. Findings indicate little new information about the effects of digital media on the social behaviour of the young. This new line of inquiry is becoming a thriving area of study as interactive media continue to pervade children's lives and as the technology itself continues to evolve, (Wartella, Lee & Caplovitz, 2002).

There is an ever-increasing equity in children's access to technology through schools and libraries and currently the most prolific of digital devices, the mobile telephone (Ling, 2004). As the nature of children's access to media changes, so do the ways in which children consume and combine media. Children excel in video gaming, web browsing, and instant messaging, most own mobile phones and many have laptop computers. They care for digital pets in virtual worlds, and play with embodied robotic pets and toys which move autonomously through the physical world. As well as playing a major part in children's social lives technology also contributes to their education. Information and communication technology (ICT) now forms part of the National Curriculum with classroom based resources offered online via school-based Intranet sites as well as homework and revision resources often provided online through those

sites along with generic types such as SAM Learning and BBC BYTESIZE. The rapid proliferation of interactive and digital technologies has transformed children's daily routines and increased concern for parents, educators and policy-makers.

Children are the most enthusiastic of consumers, engaging quickly with all things digital. The media landscape continues to develop at a rapid pace, with access to, and use of, the internet in particular increasing significantly. It is clear that technology offers children a variety of new and positive experiences which demand research as well as education to ensure they are prepared for what they might find on the web as well as being able to enjoy and benefit from it, (Bird, & Jorgenson, 2003; Livingstone, 2007; Byron, 2008).

3.2.1 Children the Internet and Communication

Communication has long been seen as central to development and, in today's modern world, children are coming of age in increasingly sophisticated and pervasive technological environments where communication is easier than it has ever been thanks to the variety of communication channels available to them. Digital communication platforms afford children the opportunity to keep in constant touch with one another, allowing them to achieve autonomy whilst contributing to their social development. It is evident that the internet offers a variety of platforms for communication, for example, asynchronous platforms such as, email and blogs as well as synchronous forms such as chatrooms and instant messaging services (Tapscott, 1998; Nie & Erbring, 2000; Joinson, 2003; Pastore 2002). Madell and Muncer (2005) describe how children and young people use the internet for communication purposes in a strategic manner dependent upon their communication needs. Pastore (2002) reports that the Internet is the principal form of communication for teenagers supported by Joinson's (2003) reinforcement of Fisher's prediction that the internet would be

used increasingly more for social purposes as had the telephone in the 1920's (Fisher 1992).

Gross (2004) sees Internet use amongst young people primarily as a tool for communication through email, chat rooms instant messaging and social networking spaces. It is therefore surprising that there have been relatively few studies that have explored the moral and social dimensions of such communication, particularly with regard to the interactions of young people. Livingstone and Bober's (2005) rigorous investigation of children's and adolescents' Internet use is an exception. They set up a large-scale UK-based study involving an in-home face-to-face survey of over 1,500 young people aged between 9 and 19 years, with additional focus group interviews and observations. Livingstone and Bober found evidence for the social benefits of email and instant messaging – keeping in constant touch with friends, seeking online advice, gossiping, flirting and making social arrangements. But they also identified areas of concern – including high exposure to pornography and violent images, and the receipt of unwanted sexual or unpleasant comments via email or text message. Perhaps more significantly for our own studies, they reported that young people were very willing to release personal information about themselves via the Internet and text, whilst also taking care to hide their online activities from their parents (63% of 12-19 year old home internet users have taken some action to hide their online activities from parents).

3.3 Child Development and Technology

Because of the ubiquitous nature of technology, it seems pertinent to consider the relationship between the stages of child development and technology use, in particular the internet - from a developmental perspective. The statistics quoted in this chapter indicate that it is possible and most likely probable that the majority of children in the UK are influenced by technology long before they

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attend school. Although pre-school children are often given supervised access to the internet, use is often limited to the activities that attract and interest them. They relish activities that offer opportunities for learning, mastery, and fun for example, learning to control a mouse by clicking on body parts or learning the concept of spatial relationships e.g. up, down, over, under. Pre-schoolers tend to be interested in stories with familiar and attractive characters (Baumgarten, 2003). In terms of psychosocial development, this age group begin to develop a sense of self-concept and vastly increase social interactions, learning social rules and developing friendships, (Erikson 1963; Flavell 1982).

From the age of 6 - 9 years children show distinctive growth and activity patterns and their thinking skills improve significantly, largely due to interactions within the competitive schoolroom environment (Baumgarten 2003). It is whilst children are within this age range that they begin to develop meaningful school-based social groups and friendships with unique rules, values, language and social conventions (Nucci, 2004; Turiel 2008). They are likely to favour many of the same kinds of activities that preschoolers do, albeit often on a different and more complex level. They continue to enjoy activities from which they can learn, grow, and test their expertise. Literacy and numeracy are the key skills necessary for this age group and currently computer literacy (the ability to interact with a wide variety of technologies and applications) is included within this sphere, (Selber, 2004). Based on their increasing capabilities and capacity for challenge and ambiguity, children in this age group will attempt activities involving higher levels of difficulty. For example this might be a task that requires reading instructions and using the computer keyboard to respond to the task. It is within this age group also that children are drawn to social situations in which they can interact with their peers; such as games and organized sports (Gotmann 1983; Rose & Asher, 2000). It is during this period of development

that the internet-enabled games console becomes a useful tool in their technological development. Although focused on the increase in social activity, children in this age group do not however withdraw from internet activities; their burgeoning physical, cognitive, and psycho-social capabilities open a plethora of internet possibilities. Growing reading ability allows for more complex written directions and feedback; enhanced memory capacity allows for memory-based games (e.g., concentration, matching) and their growing ability to reason logically offers the opportunity to take part in strategy-based activities whilst mathematical understanding allows for number-based play and scoring (Baumgarten, 2003).

The next developmental stage, 10-14 years is possibly the most interesting stage to examine when considering technology use and computer literacy. Children in this age group are fuelled with biological, physical, social and emotional hurdles to overcome as they endure adolescence, (Hall, 1904) and it is during these years that there is a marked shift in social interaction (McKinney, 1998). Rather than looking to parents for information and reassurance this age group attribute increasing importance to the views and opinions of peers (Czikszentnihalyi & Larson, 1984; Fuligni & Stevenson, 1995). Peer pressure becomes prevalent, with conformity to rigid standards of behaviour, dress, and sexual identity crucial in order to gain acceptance (Parker & Asher, 1987; Brown, 1990; Berndt, 1992; Hartup, 1996; Adams, 1997). Young people value their peer relations very highly (Youniss & Smollar, 1985) with social relationships a crucial factor in their well-being (Damon, 1997; Hendry & Reid, 2000). It is during this period of development that communication between peers becomes paramount because many of the interpersonal needs of this age group are achieved via communication – according to Brown, Mory & Kinney (1994) either as a channel or a context. Furthermore, communication is also one of the key resources by

which young people strive to achieve autonomy, (Youniss & Ruth, 2002). It is also widely acknowledged that experiences with peers constitute an important developmental context for children and adolescents (Rubin, Bukowski, & Parker, 1998) and, although acknowledged as important, the way in which peer groups influence child and adolescent development has received limited attention (Kindermann, McCollam, & Gibson, 1996; Magnussen & Statin, 1998; Rubin et al., 1998). This is even more evident in the field of computer mediated communication. It is on this basis that exploration of technological platforms such as computer-mediated-communication methods and mobile telephones is a key area of interest.

3.4 Bullying via technology

As previously reported, National Children's Homes (NCH) report that one in five children has been bullied via mobile phone or computer with bullying by text message the most common form of abuse reported. This electronic form of bullying is cyber-bullying and like traditional bullying takes place via threats, harassment, and intimidation. Cyber-bullying is as damaging as physical bullying and often takes place using such things as web pages, email, text messaging, and digital photos as its media. Often (but not always) cyber-bullying is anonymous because the Internet makes it possible for cyber-bullies to avoid personal contact. There has emerged recently the so-called 'happy slapping' phenomenon, an extreme form of bullying involving mobile technology where assaults are recorded on phones equipped with video cameras and then distributed via multi-media messaging service (MMS). Other forms of mobile bullying include receiving unwanted or threatening messages and calls as well as newly created web pages solely dedicated to victimization. This has resulted in a number of attempted suicides amongst school aged children. Internet enabled mobile phones provide a way to send text messages, instant messages or email any time, any place, anywhere, facilitating around the clock

victimization. The NCH report found that 5% of young people had been bullied in an Internet chat room and 4% via email. What researchers need to address is whether the rapid rise in the adoption of a variety of different communication technologies by young people has increased incidences of bullying or just facilitated alternative methods to an age-old problem. Is it the case that computer-mediated-communication and mobile phone communication makes anti-social behaviour easier or might it be the case that computer-mediated-communication and mobile phone communication facilitate pro-social behaviour too? In computer/internet use there are very few studies of content favoured by children and even fewer related to the interpretative activities of the user and his audience. Livingstone reports that 'reception analysis' is central within television studies (Mayer, 1998; Buckingham, 2002; Livingstone, 2002). Livingstone also points out that there is research defining and designing interactivity (Downes and McMillan, 2000), which has yet to be applied to the ways in which children use the internet although there are attempts to do just that (see Green et al., 1998). In the early days of research investigating the context and consequences of internet use was and still is significantly driven by policy imperatives which attempt to balance the opportunities and dangers associated with the internet (see Livingstone, 2005; Byron 2008). Of course this is utterly characteristic of research on children and new media, that the policy agenda drives the academic agenda (Cunningham, 1992; Wartella and Reeves, 1985). Hence, another key question is now that internet access is mobile, does society's view of the impact of internet access is reflect the view of the young user and furthermore does this ease of access enhance the opportunity for antisocial behaviour?

3.5 Mobile Telephone Research

Understanding the relationship between humans and mobile devices is not easy, (Love, 2005) and often, research is based around system evaluation.

Research on mobile phones has found that they are useful for hyper-coordination, security, socialising, relieving boredom as well as offering parents the ability to exercise control over their children's whereabouts etc. (Baursch, et al. 2001; Ling & Helmersen, 1999). Alexander, (2000) looks at expression of identity whilst Ling & Yttri (2002) interviewed children who described the mobile phone as an expression of their personality. Ling's research explains how the adoption of the mobile phone results in novel forms of interaction termed hyper and micro-coordination which he argues combine expressive and instrumental uses of the phone itself. Ling points out how the mobile telephone provides the ability for young people to co-ordinate many dimensions of their social lives (hyper-coordination). Ling (2001) examines teenagers' mobile telephone use considering factors such as maturation and gender identity. Ling (1999) also considers how the adoption of mobile telephony by teenagers has resulted in new forms of social interaction. Whilst Ling's research encompasses young people's social interaction it does not take into account the moral and behavioural implications of the adoption of communication technologies.

Adolescence is a time when traditionally socialising becomes important so communication - especially with the opposite sex – needs to take place as easily as possible (Verma & Sharma 2003). Technology removes a variety of obstacles from children's way, allowing twenty four hours a day access to friends. As with computer mediated communication the mobile telephone removes social risk such as embarrassment at rejection. This leads to the assumption that there will be conspicuous effects on the behaviour of young people. For some it is argued that the mobile telephone becomes almost a body part, an extension of the hand, (Hulme & Peters, 2001). Blom and Monk (2003) investigate personalization of PCs and mobile phones, their findings indicating a variety of reasons for personalization including group cohesion and group identity. Their findings add support to Kasesniemi & Rautiainen (2002) who

discovered a strong group membership element associated with SMS text messaging. There is a clear link with values here; in the past children were victimized for amongst other things, not wearing the correct clothes or shoes or carrying the right bag, this has now extended to owning the right type of mobile phone, carrying it appropriately and possessing the appropriate services within that device, e.g. internet access, camera, video function etc. Once again there is a clear indication that technology affects behaviour with non-conformity leading to teasing, bullying and social exclusion. This research indicates the importance of the device to children which leads to the value of communication to children and young people. The question to be addressed is whether or not there are important assumptions as to appropriate behaviour with regard to mobile technology.

The introduction of 3G technology has enabled Internet access, increased digital content, provided richer media, streaming audio and graphics on mobile phones allowing children and young people richer technology access and use. Academics might consider whether mobile phone research will investigate the same issues as Internet research, for example disclosure, trust, safety etc. or whether those issues are completely separate via this medium. When investigating the dangers of Internet enabled mobile phone use it is essential to remember that all the dangers that the Internet poses will be present but through a mobile platform where they will be present at all times wherever the child happens to be; the same of course will be true for the benefits.

3.5.1 Research & Social Practice.

Mobile phone use demonstrates how the telephone conversation is no longer a private affair, now being conducted anywhere and often at any time (Carter et al. 2007). Ling, (2002) offers insight into the intrusive nature of the mobile telephone with regard to social practice. Love and Perry (2004) examine the

intrusive nature of mobile devices. The Nestlé report points out that new technologies require new codes of behaviour, for example, cinemas now precede each film with a reminder to switch off mobile phones and most trains are equipped with a 'quiet carriage' where the use of mobile phones is forbidden. Furthermore, because mobile phone contact is so frequent (whether by SMS or personal call) it frequently interrupts face to face contact bringing good manners into question as well as social practice.   If these new technologies require new codes of behaviour then the premise of the current thesis is a timely addition to the research domain.   It will be interesting to investigate whether children are aware of social norms surrounding their own mobile phone use.

Recent modes of computer-mediated communication, including email, blogging, instant messaging and text messaging are redefining the social networks of today's youth. They offer quick, inexpensive channels of communication which in turn lead to increased interaction, friendships and often lead to the development of new social networks. Socially interactive technologies are used by young people to enhance communication amongst friends and family, to make plans with one another and to maintain social contact outside day-to-day face-to-face interaction (Grintner & Eldridge, 2001; 2003; Ling, 2001; Valkenburg, & Peter, 2005). The issue here is whether or not young people are aware of the social context of their mobile phone use. Ljungstrand (2001) reports on the social conventions determining the ways in which technological advances have enhanced the possibilities for communication. Young people are struggling to adapt and fit in to their surroundings whilst bound by the conventions of peer pressure. They outline the importance of being in constant touch with their friends so it is possible that the constraints young people find themselves under may be reflected in their technology use. There is a wealth of

research examining the use of mobile telephones from a social perspective. Ling, 1997 examines use in restaurants; there is research examining attitudes towards its use in public (see Ling, Haddon & Klamer, 2001; Palen, Salzman & Young 2001; Love, 2001, 2004). Despite this interest however none addresses the young user and, as reported earlier is often based around system evaluation and attitudes.

3.5.2 Social Engagement

Mobile phone ownership is one easy way for such individuals to increase their social capital and enhance social engagement without having to employ anxiety-provoking personal discourse. Technological devices such as mobile telephones may increase a young person's social capital via social engagement, (NMI, 2006) particularly since ownership of a mobile device may be a shared expectation or norm for that young person's peer group. Lobet-Maris (2003) also provided support for the theory that mobile phone ownership can increase social capital, as, in a similar way to Ling (2004), she argued that that the significance of mobile phones for young people is not just as a tool for communication but also as a symbol of identity. She examined data from a survey carried out in October 2000 by Motorola-Inra with 300 12-18 year old Belgian participants and found that young people's choice of one phone over another is often determined by style rather than function. In a discussion of research related to the societal perspectives of mobile telephony, Ling (2004) supported the idea that mobile phone ownership can increase a teenager's social capital, stating that this technology affords 'social integration at the symbolic level and provides the individual with a sense of self' (p.184). Ling's own research (Ling and Yttri, 2001) also revealed that young people view their mobile phones as fashion statements and that having the wrong phone could have a negative influence on an adolescent's affiliation with his or her peer group. This is echoed by Davie et al (2004) who reports that children view their mobile telephone as a fashion

object able to facilitate chat and gossip. Finally, an additional approach is posited by Ling (2003) who argues that mobile phones can be seen as part of an individual's 'personality kit'. His paper describes how artefacts such as the mobile telephone are frequently used by teenagers to mark boundaries between different social groups. Of course, it is vital that the artefact is the most appropriate possible. The desire amongst young owners is to possess the 'right' mobile telephone with the 'right' functions which according to Economides & Grousopoulou (2009) include battery life, mp3 player, video camera, photo camera, storage memory, Bluetooth, design and elegance, clock, calendar, organizer and reminder. Furthermore, in an effort to secure this their sample indicated that they would be willing to pay for those functions.

Personality has also been examined in relation to mobile phone use. Reid and Reid (2004) discovered clear distinctions in the motivations and uses of mobile telephone technology. Butt & Phillips (2007) used the NEO-FFI as well as Coopersmith's self-esteem inventory and found that extraverts are more likely to use their mobile telephone as a form of stimulation whilst being less likely to value incoming calls. They also report that extraverts are more likely to use SMS text messaging services. This is a new and interesting area of research which demands attention, particularly for young people who are at a critical point in their development.

3.5.3 Children and Mobile Phone Use

Children and young people have always been keen to grasp the opportunities offered by new technology and, with increasing rates of ownership at ever decreasing ages, the mobile telephone is no exception (Greenfield & Cocking, 1994). According to Mobile Youth, 1.1 billion youth own a mobile telephone, a figure that is growing by 100,000 every year. Figures suggest that adolescents spend eight times as much on their mobiles as they do on music, however anecdotal evidence suggests that this is probably as a direct result of illegal file

sharing (Mobile Youth, 2009; Gross, 2004). Interestingly, the number of under 30's who smoke has fallen as the rate of mobile ownership has risen therefore it seems pertinent to raise the question of the effect mobile phone use has on young people. Developments in mobile technology have been rapid in recent years, meaning that mobile phones can now do much more than make voice calls. Integrated cameras, video messaging, mobile access to the internet, and location-based services are now commonplace, allowing access to a whole array of new content and services (Siau & Shen, 2003). These added extras provide young people with increasingly varied platforms for exchanging information. As outlined in previous chapters, communication is an essential ingredient of human social, psychological and even physical well-being (McKenna & Bargh, 2000; Nie & Ehrbring, 2002). The mobile telephone, by facilitating any time any place anywhere gossip in the modern world, has become a vital 'social lifeline', re-creating the more natural communication patterns of pre-industrial times (Fox 2001). Offering platforms for picture and video communication alongside text or chat is yet another avenue for young people to exploit to their own advantage.

Young people have already shown how adept they are at experimenting with new services and defining uses (Calvert & Jordan, 2001). For instance, mobile phone companies were taken completely unawares when children began using their handsets to send text messages rather than calling each other, instigating a new form of faceless communication (Dhaliwal, 2002). For children at least, text messaging competes with actual telephone conversation mainly it seems due to cost benefits. A report from the Nestlé Social Research Programme, (2005) showed that young people prefer to 'chat, flirt, make dates and often end relationships by text'. Their study found the mobile phone central to the lives of 97% of females and 92% of males from a national sample of 11 -21 year olds.

Like Ling (2001) they identified that the mobile phone was much more than personal property, being a vital part of the person, their identity, self-expression and social lives. Haste (2005) also indicated that identity and style are important for young people where mobile phones are concerned, stating that 67% of young people personalise their phones with a background screen image, 58% with a downloaded ringtone, and 36% with a snap-on cover. Also important to young people was where they keep their phone with over three-quarters of Haste's sample reporting that one should never keep a mobile phone on one's belt, it being viewed as something 'old' people do.

3.5.3.1 Children, Mobile Telephones and Communication

The social evolution of communication technology is extremely dynamic. Digital communication resources such as the Internet and mobile telephones are seamlessly integrated into children's lives allowing new kinds of communication. When manufacturers and service providers marketed mobile telephones, little did they realise the impact they would have on children and young people. The first mobile phones were adopted by 'yuppies' not teens (Ling, 2004, p.4) but have now infiltrated everyday life with push-to-talk (PTT), multi-media-service (MMS), short message service (SMS) or text message as well as wireless (WiFi) internet access at the push of a button. Now that the humble mobile phone has evolved into a handheld computing device equipped with camera, mp3 player, internet browser, tracking capabilities etc. the social consequences of mobile telephony demand investigation. Examining the adoption and use of the mobile phone along with the attitudes associated with these devices is of particular interest when we consider the young user's perspective. Mobile Youth report that 52% of UK children aged between 5 and 9 years have a mobile telephone; this rises to 85% for those aged 10 to 14 years. This can be viewed as a direct reflection of the importance of communication with peers in this critical developmental phase.

Although the mobile telephone in the 21st century is designed as a multi-functional device, it was originally designed as a method of voice-based communication, (Ling, 2004). It is fascinating that in their quest to maintain easy cheap contact with one another, teenagers were responsible for the changing nature of mobile communication. Teenagers discovered that mobile telephones offered a very restrictive and hard to use function which could be used to communicate for free. The humble text message (SMS) was a method adapted by young users to capitalise on communication and avoid cost. This mirrors the predictions made for internet communication (Madell & Muncer, 2005) and is an indication of young people taking an existing medium and adapting it to their own purposes. There is an enormous body of work examining the adoption of the mobile phone by children and teenagers, (La Ferle, Edwards, & Lee, 2000; Ling, 2001; 2004; Ling & Yttri, 2002; Katz, & Aakhus, 2002; Blom and Monk, 2003; Madell & Muncer 2005). Findings indicate that the actual device is as important a method of communication for peer acceptance as communication itself. Blom and Monk report that users personalise their devices in an effort to make them personally relevant, whether that be aesthetic - in terms of colour or ringtone - or from a functional perspective, in terms of content and more recently, applications. They report how these small changes can indicate important issues such as personal identity as well as going as far as revealing emotional state of a user. Furthermore, there is a developing literature on the social implications of mobile telephony, (Castells, 2000, 2007; Taylor & Harper 2001; Yu & Tng, 2003; Campbell & Park, 2008).

3.6 SMS Text Messaging

As with many technological devices, the mobile telephone has adapted to allow it to function on a variety of levels. Short Message Service (SMS) also known as text messaging was originally a means of sending short messages (up to 160

characters in length) to and from mobile phones. Messages can now be sent from a variety of different platforms and the breadth of texting has widened to allow transmission of photos, videos, music clips and other attachments.

The first commercial SMS text message was sent in December 1992 but it took another year for the first personal text message to be sent. There were 82 million person-to-person text messages sent per day across the UK network in January 2005 an increase of 15.7% on the total sent during the same period in 2004. There were 4.5 billion person-to-person SMS text messages sent per day across the UK network in May 2007 an increase of 40% on the total sent during the same period in 2006, by 2008 this had risen to 1.4 billion SMS text messages being sent in the UK every week, (MDA 2008). Text messaging is one of the most successful mobile services adopted by young users although the reasons for such a rapid and successful uptake are open to debate.

Pedersen (2002) suggests there are three research traditions that are relevant to adoption of text messaging: gratification, adoption and domestication. Ling (2004) on the other hand proposes that the answer to its popularity is that text messaging is relatively cheap and convenient allowing the user to maintain contact with friends in an inconspicuous manner. Text-based SMS messages can be sent simultaneously to any number of recipients and therefore are incredibly popular with young people as a means of communication. Recent figures regarding children's use indicate that 97% of 12-16 year olds own a mobile phone. Research conducted by ICM (see icmresearch.co.uk) revealed that 72% of females actually prefer to use text messaging rather than talking and one third of over 65's with mobile phones use text messaging on a regular basis. Nokia reported recently that 'Mobile messaging is the modern way to communicate. It's instant, location independent, and personal. That's why the

new mobile phone generation has started to favour messaging, making it one of the fastest-growing segments of the mobile communications industry' (Nokia, 2002). There is little research data addressing the mobile phone use of individuals under 18 years of age.

SMS (Short Message Service) text messaging has been effectively customized by European teenagers as a ubiquitous social networking medium, possibly fuelled by the widespread availability of pay-as-you-go mobile phone contracts (Grintner & Eldridge 2001). Pre-pay or pay-as-you-go allows greater access to young users as they do not require credit checks. The cost was originally managed through vouchers and the widespread availability of vouchers allowed young people a sense of autonomy. Topping up a mobile telephone with credit is now even easier with ATM cash dispensers offering a mobile top-up the service as an on-screen option. Another useful way to restore credit is online especially if the mobile phone is equipped with mobile internet access which is standard with most models currently.

Although originally intended to be used for voice communication, young people adopted the SMS text message capability despite it having been a by-product of mobile telephone design communication (Arminen and Leinonen, 2006; Hutchby and Barnett, 2005; Katz and Aakhus, 2002; Weilenmann, 2003). SMS is the ability to exchange strings of alphanumeric characters from one phone to another, using the handset's keypad to input text-based messages and the display screen to read them. These messages are commonly known as 'texts' and the activity of using SMS to send and receive texts has become known as 'texting' (as in 'Text me', 'I got your text' or 'I texted her half an hour ago'). Restricted to 160 characters per message (hence the term *Short* Message Service), the constraints this placed on text-construction have been avoided by

adoption of abbreviations. This development by users is commonly referred to as 'text-speak', (e.g. See you later becomes CU L8R). The use of emoticons (smileys) was introduced to reduce the abruptness of the medium and indicate the mood of the person in a way that was difficult with just text. Thus, young people took an expensive device with expensive tariffs and manipulated it to produce a new form of faceless communication. Text messages are now often free and vary in form, content and length (Hutchby, 2008). Furthermore the development of WAP (Wireless Application Protocol) technology enabled the exchange of text messages via the internet and the introduction of Bluetooth technology has enabled the exchange of a variety of electronic files, images, messages, etc in a secure manner, (Bluetooth *wireless technology is a short-range communications technology intended to replace the cables connecting portable and/or fixed devices while maintaining high levels of security). Katz & Aakhus, (2002) report that despite these innovations, the most popular utilization of SMS remains its most basic feature – person-to-person communication by sending and receiving text messages from one mobile phone to another. The number of text messages sent in the U.K. is increasing month on month, year on year. As more young people have access to mobile phones this growth will continue. While many of the studies addressing text messaging are concerned with either demographics or design, (Rintel and Pittam, 1997; Garcia and Jacobs, 1999; Hutchby, 2001) increasingly researchers are asking questions about the social content of messages and the impact of those messages on young people's lives, (Grintner & Eldridge, 2001; Srivastava, 2005; Faulkner & Culwin, 2005; Hutchby & Tanna, 2008). For example, in a study exploring the ways in which young adults use text messaging to organise their social lives, Barkhuus (2005) found that a number of young people used text messaging as a means of overcoming shyness, but also noted that they displayed pro-social behaviours via text that they would not have engaged in

otherwise. She gives the example of a participant who sent a message to a friend to ask how an exam had gone and explained that this was not something he would normally do face-to-face – but added that it was part of what was considered 'proper social behaviour' in the texting world. Other studies have noted the ways in which certain texts sent and received effectively take the form of 'gifts' (Taylor & Harper, 2002; 2003) and can be transcribed into special notebooks or stored long-term as treasured memories and such findings are part of a growing literature exploring the rituals of exchange associated with mobile technologies (Katz, 2008). Taylor and Harper's (2002) and (2003) research suggested that teenagers use their mobile phones in ways that closely resemble the social practice of gift-giving. This further suggests how mobile phone ownership by shy young people might increase their social capital. Taylor and Harper stated that text messages can resemble gifts as they have symbolic meaning for the recipient and can demonstrate commitment to a relationship. In addition, as with gifts, there is often an expectation of reciprocity when text messages are sent. Furthermore, young people may often share their mobile phones and the credit attached to them in a system of exchange which is valued by the social group. In the light of these studies, it can be seen that often it may not be the straightforward communicative aspects of mobile phones that are of most interest to young people at all; rather the use of mobile phones may have a more significant cultural meaning for them. This is an issue that has not escaped the attention of the popular press in the UK (Hanman, 2005).

As will be reported there is an effort to address the impact of the mobile telephone on society but this research has focused on issues such as the intrusive nature of the mobile telephone (Love, 2001, 2004; Ling, 2002, Ljungstrand 2001). Argyle (1984) stated that interpersonal transactions are a fundamental element of society and that is absolutely true for the developing

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child particularly during adolescence. The mobile telephone extends the reach as well as offering immediacy to young people (Plant, 2000), this in turn supports their efforts to secure independence and privacy enabling them to function in a world increasingly under their own control. The increasing functions available via the mobile telephone demand that researchers investigate the impact of those capabilities on human behaviour.

3.7 Conclusion

There is a lack empirical research addressing the wide variety of available communication applications such as text messaging as well as the content of such messages or the consequence of sharing such content with a wider audience. On this basis the following chapters will explore the importance of communication technologies to the young people adopting them. Chapter 4 will canvas the opinions of the young technology user and in so doing elicit their attitudes towards technology and its applications and relevance to them rather than those of the parents, educators and media. The previous chapters have summarized the ubiquitous nature of technology in the 21st century and its emergent role within the dynamics of communication. The thesis has also described how technology can impact upon child development and outlined existing models of communication within the psychological literature. What follows is an effort to expand upon the current literature and investigate the views of young people towards the technology they are exposed to, the technology they have access to and how they choose to utilise that technology.

Chapter 4 Exploratory Research using Focus Groups.

Based on the information outlined in the previous chapters, the significance of communication technology for the young user, chapter 4 endeavours to explore the omissions in existing literature. Using focus groups the following qualitative study canvasses the opinions of young technology users in an effort to elicit their attitudes towards technology and its applications and relevance to them rather than those of the parents, educators and media. Focus groups were chosen as the appropriate methodology for this investigation in order to collect information considered important by young technology users. The rationale behind using this particular method was in an effort to collect data from a true grounded theoretical perspective and almost eavesdrop on young people whilst they discussed their uses and opinions of technology. Thematic analysis revealed three broad themes, technology usage preferences, negative aspects of technology use, and positive aspects of technology use. These themes were split between social and moral issues fundamental to the development and maintenance of communication between peers forming the basis of group membership.

4.1 Introduction

Social psychologists have long argued the importance of communication in society and there is an extensive research body indicating the importance of communication to adolescent development, (Damon, 1997; Thurlow, 2005; Valkenberg & Peter 2007). Previous chapters have outlined the significance of communication technology for young people however, the focus of research in relation to children's use of technology has often been on those responsible for children, based on the assumption that 'mother knows best', (Subrahmanyam, Greenfield, Kraut & Gross, 2001; Livingstone, 2003). Relatively few studies consider the fact that in society today the variety of communication media adopted by children far outweighs that used by adults, reinforcing the preconception that children are generally more digitally aware than adults (Healey & Anderson, 2007). The availability and use of technology by children

has almost reached saturation point, particularly communication technologies such as mobile phones with their short message system (SMS) and on the Internet through Instant Messaging (IM), chatrooms, social networking sites, weblogs and email.

The societal and human implications of advances in technological communications media are, as yet, unknown. In 2006 a YouGov poll reported that more than 90% of 16,500 people questioned stated that they could not get through the day without using their mobile phone (Metro 2006). As far as children and young people are concerned this figure may well be higher, Barnardo's (2007) report that 70% of 16-24 year olds use social networking sites to communicate whilst 60% of 13-17 year olds have personal profiles on networking sites. Srivastava (2005) points out that in 2002 the number of mobile subscribers overtook the number of fixed-line subscribers on a global scale making mobiles the dominant technology for voice communications. Research by industry experts Gartner show figures for global handsets sales in 2008 was 314.7 million devices (Gartner 2008) a 4.6% decline on the previous year most probably due to current economic conditions. The rise in internet access and mobile telephone ownership by children and young people has been phenomenal. According to Livingstone (2005) 75% of 9 – 19 year olds have access to the internet at home and 92% have access at school. As reported earlier it is predicted that 65% of children in the UK between the ages of 8 and 15 years own a mobile telephone. The result of this saturation of mobile communication technology promises the evolution of a new and exciting mobile culture. Young people see their mobile telephone as key to their social existence, relying on it to maintain contact with family and more importantly, friends. For both adults and children mobile phones are no longer seen as a luxury but a necessity (Taylor & Harper, 2003). In addition to calling and text

messaging, young people regard their mobile phones as life management tools. To the young user the mobile phone serves as an alarm clock, calendar, source of entertainment, but most importantly as a means for maintaining and expanding social networks. For the young user where cost is often an issue the most popular way of keeping in touch is by text message (SMS). This in itself has led to the youth of today being called 'the text generation' (Times Higher Education, August 2007) and offered service providers yet another avenue with which to collect revenue from an ever widening customer base. Personalisation of devices is also seen as standard practice as the mobile telephone becomes a fashion accessory, (Katz, & Sugiyama, 2006). This in turn has led to an emerging industry in its own right, phones being offered in a variety of configurations. There are countless different tariffs available to users as well as devices in different shapes, sizes and colours and even handsets designed by different fashion houses such as Prada™ for instance.

The media reports daily on the imminent dangers for children using the internet whilst, simultaneously, extolling the virtues of the world-wide-web as an excellent tool in a child's search for knowledge. The news for technology is not all bad; in a European research project young people in the neet category, (not in employment, education or training) were given state-of-the-art mobile phones in an effort to tempt them back into learning (www.communities.gov.uk). Results revealed that 80% felt mobile gaming could help them to improve their reading, spelling or maths ability. Whilst this experiment was directed towards those who had dropped out of formal education the potential for mobile phones and other hand-held devices to be used as learning tools is apparent. Academic staff in a Leeds University is trialling an SMS-based system with students where they are asked topic specific questions and send their responses to a web-based inbox which can be immediately transmitted on to a screen (in press).

Up to this point in time research addressing technology use by children and young people has focused upon areas deemed important to adults, rather than examining areas that might be relevant to young users themselves. Morgan et al (2002) point out that 'children are increasingly acknowledged to have rights in the determination of decisions that affect them' they go on to identify that when their views are examined there is 'a considerable gulf from parental concerns' (Wartella & Jennings, 2000; Shields & Behrman, 2000; Orleans & Laney 2000). In an effort to address omissions in the literature an exploratory study was carried out to identify the issues relevant to young people using communication technologies rather than relying on what parents, educators and politicians deem important. The current study was carried out to examine the implications of digital communication media for children and young people. The goal was to elucidate the types of issues faced by young people interacting with and through technology as well as to investigate whether young people are aware of the concerns of adults and whether they share similar concerns.

4.2 Method
In order to be able to elicit those issues deemed important by children and young people, focus groups were chosen as an effective method of obtaining information allowing participants to take control of the conversation and discuss issues relevant to them, rather than those suggested as important by parents, teachers or the researcher. The rationale behind this choice was to try and elicit information from a truly grounded perspective.

4.2.1 Participants
An opportunity sample of forty five participants (N = 23 male, N= 22 female) were recruited through schools and youth groups in the North East of England. The focus groups were divided into three age groups, with 9 - 11 year olds (N = 8 male, N = 7 female); 12 - 14 year olds (N = 8 male, N = 7 female); and 15 - 18 year olds (N = 7 male, N = 8 female). The age group split was initially arbitrary

based on availability however the age groups can be considered to cover the range of developmental stages described in chapter three.

Focus groups took place in schools and youth groups and sessions lasted approximately 45 minutes each. Each individual group consisted of 4 - 6 participants and were held in a classroom within the school for the two younger groups. Structure of the groups was all male, all female as well as mixed male female groups. This choice was made on the basis that gender segregation begins to diminish in adolescence and same sex peer groups offer different forms of interaction, (Richards et al. 1998; Bergin et al. 2003). Boys are reported as being more domineering and restrictive in their interaction style (using more contradictions, interruptions etc.) whilst girls are judged to be more collaborative in their style of interaction (expressing agreement, pausing for others to speak), (Maccoby 1990; 1998). Older participants were invited to attend sessions within the university or visited in their youth group location whilst the younger children took part at school during the school day.

4.2.2 Materials

A list of prompts (see Appendix 1)

Sony digital tape recorder

Atlas.ti coding software

4.2.3 Procedure

Participants were invited to discuss what types of media they used as well as how and why they used it. Participants were permitted to guide the discussion although prompts were used if they wandered off topic. A full list of prompts can be found in appendix 1 and included issues such as, preferences for sending emails or text messages, using instant messaging services or making calls; they were prompted to explain why they chose each particular medium. Participants

were asked to consider any social rules that accompanied technology use such as inclusion/exclusion for instance, as well as views on lying via text or email and cyber-bullying whether through the internet or via text message. Prompts also included topics such as the capability of mobile telephone operators to offer tracking services in an effort to determine the consensus on their location being available to a third party. Groups were also asked to discuss the nature of communication via technology with regard to emotion detection and how they identify mood or feelings. Finally the participants were asked for their views on the importance of privacy and with whom they were willing to share information when online or sending text messages. Focus group discussions were recorded using a Sony digital tape recorder and later transcribed by the author.

4.3 Results and Discussion

The focus groups were recorded and transcribed verbatim before being analysed using ATLAS.ti software. The data were analysed using a Grounded Theory Approach (GTA) based on the method of Strauss and Corbin, (1998) without using the paradigm model, (linking subcategories to categories using conditions, context action-interactional strategies and consequences). Using the paradigm model involves preconception and forces theoretical concepts on the data (Blom and Monk, 2003). Glaser's (1992) suggestion that the researcher openly codes for categories allowing conceptual relationships to emerge from the data was deemed appropriate. This facilitated a clear understanding of the aspects of technology use that are of most relevance to young people themselves.

Focus groups were chosen as the appropriate methodology for this investigation in order to collect information considered important by young technology users. The rationale behind using this particular method was in an effort to collect data from a true grounded theoretical perspective and almost eavesdrop on young

people whilst they discussed technology, how they view it and what they use it for. The focus groups were split according to age however these age groups were purely arbitrary in that they were how the participants were presented to the researcher. For example, the schools who allowed their pupils to take part offered the opportunity to children between the ages of nine and eleven years. The second group, 12 to 14 years were a self selecting sample from a youth group in the North East of England and the older group 15 to18 years were recruited via an appeal on BBC radio. As such, age differences in technology use emerged naturally although there were many similarities in attitudes towards technology. It became clear during analysis of the transcripts that there were some age differences in attitudes towards the themes identified and these differences are presented with supporting excerpts from the focus group transcripts in following sections.

A preliminary framework from which to examine young technology users' behaviour emerged from the data. Initial analysis involved extracts being characterized for content through open coding. Three broad themes were identified as demonstrated in table 4.1 which were created by listing any patterns arising from the data and then combining related patterns into sub-themes. The sub-themes then combined to produce overall themes. Analysis began by labelling all focus group utterances, resulting in the identification of 24 categories (see table 4.1). The 3 themes were identified as: technology usage preferences, negative aspects of technology use, and positive aspects of technology use. Each of the themes are presented in turn with supporting extracts to explain each of the contributing sub-themes beginning with usage preferences then moving on to positive and negative aspects of technology use. The chapter is then brought to a close by discussing the themes identified within a preliminary framework in relation to existing models of communication.

Table 4.1: Themes related to technology use

Usage Preferences	Positive aspects	Negative Aspects
Access	Communication	Bullying
Communication	Control	Deception
Games	Friendship	Exclusion
Independence	Honesty	Gossip
Ownership	Independence	Health
Rules	Moral	Lying
	Privacy	Moral
	Safety	Negative content
	Secrecy	Social
	Sharing	Tracking
	Social	
	Trust	

4.3.1 Usage Preferences: Access and Independence

Initial findings demonstrate that there are notable differences in attitudes towards technology and its uses and this was dependent upon the age group of the children.   When asked which devices they used and why, participants indicated that availability of, (ownership) and access to a device were major determinants in their decision-making. All participants in the older age groups owned a mobile telephone and had full access to the internet at home via pc or games console. In the youngest age group (9-11 years), not every child had access to mobile phones, or to the internet at home. Notwithstanding this, each participant had at some point had the opportunity to access the internet and use a mobile telephone, either at school or via friends' willingness to share devices, ("*No, cos like they let me play games on their phone and that*". Male, 9-11 years).

Access to technology was described literally but it was also described as being a way of maintaining a sense of independence, although this was more relevant to older groups, ("*On the Internet at home the parents can lock things out and stuff but on the phone the parents don't know what they are looking at*". Female,

15-18 years). Independence was also expressed in terms of the negative consequences. Firstly, in terms of having the independence to choose whether to communicate and with whom, (*"The good thing about MSN is that you can block people if they start being abusive to you, you can block them so you don't have to talk to them".* Female 15-18 years). Secondly, independence was expressed negatively in terms of losing or being unable to use a mobile telephone ("*That would be torture! That would be my social life down the drain".* Female, 15-18 years). Termination of access to a mobile telephone through loss of the actual device was expressed particularly strongly by females in the 15 - 18 years age group. They described how it would also facilitate a huge sense of social loss in terms of access to friends because all of their contact details are stored within the device ("*Oh I would be lost without my phone, I wouldn't have anyone's numbers".* Female, 15-18 years). This reinforces the importance of technology to the young user as a social necessity and describes the multi-purpose nature of the mobile telephone in particular as more than just a device to make calls, impacting on emotions and suggesting a dependence on the device.

4.3.1.2 Communication and Friendship

The single most popular reason for engaging with technology in all age groups was to communicate - with friends, parents and extended social networks and peer groups. Participants made it clear that communication was important in a variety of ways; for example as a social tool, (*"When I am at school I see loads of friends but when I am out of school I see hardly any but now that I have MSN I can keep in contact with them, which I wouldn't normally see them but I can talk to them which still shows that you are interested in what they are doing and that you care."* Male 15-18 years). Technology was a method for keeping in touch with people they had met on holiday, ("*And in the holidays there are certain friends that you won't normally go and meet cos they live far away, so*

you can still keep in touch". Female 15-18 years), as well as for maintaining communication with family, for example an absent parent, ("*I would miss mine because my Dad rings us all the time cos I don't live with my Dad I only see him on the weekends and he rings us nearly every day".* Male 9-11 years). Participants also used communication via text message (SMS) to reassure parents of their whereabouts, letting them know that they were safe, (*"If you are with your mates and your mum or dad want to know where you are you can just text quick and it's done, they're happy you're happy you know?"* Female 14-18 years). They also made distinctions between modes of communication with regard to rules of usage, ("*For text messaging it is more like socialising like hi what are you up to?, but ringing is more like homework and like what is this and that".* Male, 15-18 years).

Whilst groups did mention using a home PC to complete homework and/or play games, this was alongside having MSN open to enable simultaneous communication with friends. Some participants also referred to gaming via dedicated games consoles, (Sony Playstation, Microsoft X-Box, Nintendo Wii) which at the time of the study were yet to be internet-enabled.

4.3.2 Positive aspects of technology use

Results illustrate that children regard communication technology as a positive addition to their lives. Of the twenty-four identified categories, 50% were related to positive aspects of technology use. It is also apparent how some codes fit into more than one category dependent upon the information or the reason for the information being communicated. For example, communication and independence were regarded as belonging within the previous theme usage preferences as well as the current theme (positive aspects of usage). The framework lists communication as a sub-theme within two categories. As described in the previous section, communication is the single most important

aspect of the young technology user's behaviour. For the most part the reason was purely social, maintaining contact with friends; communicating between existing friends was the main reason for user behaviour however all users were aware that shared information was often disseminated further than the intended recipient. This finding sits comfortably within the existing models of computer mediated communication i.e. supporting the social identification model (Reicher, 1984) where group members are compelled to adhere to social norms and exhibit reciprocity. It also relates to the characteristics outlined by Walther's (1997) hyperpersonal model of computer mediated communication.

The sub-theme moral fitted within positive aspects of technology use as well as being appropriately linked to the final theme of negative aspects of technology use. Participants discussed moral behaviour from a positive perspective in terms of good manners *during* the focus group discussion, (*"it would not be appropriate to text right now"* Male aged 15-18 years) as well as from a negative perspective in terms of being dishonest with a parent, *("Me mam text me where are you and if I'm not I'll just, oh yeah I'm here. I do it all the time".* Female 15-18 years). For younger users moral behaviour was referred to from a positive point of view demonstrated for example when discussing what to do with inappropriate or worrying content, (*When I got a nasty message on MSN once I just showed my Mam and she deleted it.* Female, 9 -11 years).

4.3.2.1 Control

Control was described by all as being a positive aspect of technology use as it allowed the participant to control the circumstances in which they were able to be contacted. Existing models of computer mediated communication argue that users can control online relationships afforded by perceived anonymity. The framework posited here demonstrates that young people view control differently because of the distinct lack of anonymity between correspondents. For the

young user, the framework identifies control from a different perspective, for example, one young user describes a sense of having some control of important relationships, ("*I can ring me Dad when I want to, cos he doesn't live with us."* Male aged 9-11 years). This emphasize the importance of communication for young technology users, something not addressed by existing models of computer mediated communication.

Older users demonstrated an increased level of autonomy within their technology use and therefore a greater need for control. Communication technology allows young users an increased sense of independence and control in that they can initiate contact when desired but that control can also relate to different themes identified within the framework. For example, the user has control of the applications they choose to interact with and through, ("*If you don't go on MSN it's better cos you don't have loads of people ganging up on you".* Male, aged 12 -14 years; "*The good thing about MSN is that you can block people*". Female aged 15-18 years). This conflicts with the social identification model, which argues that group members are compelled to adhere to social norms and exhibit reciprocity. What the framework demonstrates is young users will not choose to exhibit reciprocity allowing individual self-identities to be superseded by group identity and that rather than join in with negative behaviour they choose to behave in an entirely opposite manner. The excerpts presented above suggest that young users are not willing to allow a reduction in visual cues to alter their behaviour. The hyperpersonal model argues that this is exactly what computer mediated communication does in that it intensifies relationships in such a way that similarities between the two individuals are magnified and the differences are minimized. The type of control identified by the current framework highlights the failure of the hyper-personal model of communication to explain behaviours demonstrated by young technology users.

4.3.2.2 Safety

It is interesting to note that the children in this study did identify the topics pointed out by academics (Livingstone, 2005, 2007; Byron, 2008) as critical for child protection, for example, rules and safety issues. Participants demonstrated that safety education was recognised even though it was not always adhered to, (*"I go on my Mum's account if I go online cos if I go on she's got these parental control things but she knows I go on her account cos my Dad made it so stupid that I couldn't go on anything!"* Female, 12-14 years). Participants discussed personal safety, physical and emotional safety from predators, and how to react to inappropriate contact in the correct manner, (*"It was a stupid little tiff and I got dragged into it and I showed my Mam and she said delete it."* Male, 12-14 years). They discussed social safety, in terms of being able to withdraw from conversations and how to ensure the safety of young users from inappropriate content on internet-enabled phones ("*It can ruin their little innocent minds*". Male, 12-14 years). They also demonstrated awareness of appropriate behaviour ensuring safety of property ("*It makes you more sensible and that just you have got things to look after".* Male 15-18 years; *"Aye, cos it costs loads of money and that,"* Male, 15-18 years).

All of the issues described above relate to previous sub-themes such as access and control and sharing. The hyperpersonal model of communication (Walther, 1997), states that interactions produce intense, overly intimate relationships magnifying similarities between correspondents and minimizing differences leading to negative consequences. The issues identified above demonstrate behaviours that the hyperpersonal model cannot explain. Safety, is demonstrated as being relevant to each age group and furthermore, like the previous themes identified within this framework emphasizes the general sense

of positive morally responsible behaviour displayed by young people engaging with computer mediated communication technology.

4.3.2.3 Sharing

Evidently children and young people are adopting technology and using it to their full advantage as suggested by Madell (2005). Children are adapting to, and taking advantage of, the many functions available to them through communication technology. For the most part, children's technology use is strongly related to maintaining contact with friends, making friends, and generally being friendly as well as other purposes such as maintaining a sense of independence and sharing information with parents. Participants talked about sharing in a variety of ways. Availability of and access to devices led to the exposure of sharing as a social and moral concept, for example, sharing devices ("*They let me play games on their phones and that*" Male, 9-11 years). Sharing information such as gaming strategies along with SMS text messages, addresses, photos etc. was discussed although the majority of sharing was sharing information, a major topic discussed in a variety of ways (*"Yeah cos it gets you more contacts and that, as long as they are girls like!"* Male, 15-18 years). For example, participants discuss sharing secrets with friends, which is part of the process of development of friendship and trust as described in chapter 2 as disclosure (*"Some of me friends don't keep secrets and that"* Female, 9-11 years). There was also an example of speedily adopted technologies being used in unexpected ways as they integrate with an established social context and so adapting to that context as predicted by Taylor and Harper, (2003).

With regard to existing models of computer mediated communication, sharing is fundamental. All models describe increased disclosure facilitated by anonymity and reduced cues. For the young people in this study all these models fail to

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address the distinct lack of anonymity shared by them. The easy sharing of devices and information, whether secrets or gossip suggests an implicit notion of trust engendered by the young technology user and this is not addressed by any of the existing models of computer mediated communication. The framework suggested here offers a basis for further research to examine these issues.

4.3.2.4 Honesty and Secrecy

Honesty and secrecy were both deemed to fall within positive aspects of technology use. Although some comments from the focus groups offered as demonstrating discussion of the topic might also suggest dishonesty, the sense of morally responsible behaviour is demonstrated within this subtheme, (*"I tend to be honest with her, we have a canny relationship. And I get the feeling she is going to find out anyway."* Male aged 15-18 years). This is reinforced with young people using secrecy as a way of allaying a parent's fears for a child's safety and maintaining a sense of equilibrium between the child's quest for independence and the parents need to ensure protection (*"With my Mum I have been honest with her and just told her where I am cos she is usually happy with it."* Male aged 12-14 years). Yet again, the aim is to choose the appropriate course of action and behave in a positive manner. Such behaviour is not supported by the existing models of computer mediated communication which all concur that correspondents will conform to achieve acceptance. The comment offered to demonstrate secrecy can clearly be linked to independence (*"Sometimes I have to lie about it because even though I am with my cousin who will look after me she is a bit, well, she is not happy with it. So it is easier that she doesn't know exactly where I am going."* Female, aged 15-18 years). Participants in the younger age group also referred to honesty and secrecy (*"Some of me friends don't keep secrets and that"* Female, 9-11 years) although from a somewhat negative perspective. Whilst some of the issues identified

within a subtheme might differ between age groups, the findings reveal further support for the relevance of the framework for all age groups.

4.3.2.5 Trust

Trust can be described as a function of information sharing manifesting itself in different ways. Participants described sharing information with friends, trusting them with gossip for example, *("It's easier to gossip on MSN"* Female 15-18 years; *"That's the best thing like, all the gossip"* Female, 15-18years; *"Rumours and that? I do it all the time."* Male, 9-11 years). They also discuss sharing sensitive information with parents and the police if they came across anything inappropriate or dangerous, and trusting them to deal with the situation, ("*I would go to my parents first and they could go to the police and sort it out from there".* Female, 12-14 years; *"I would tell my Mam and ring the police and that so that they knew". Female, 9-11 years*). Furthermore they discuss trust in parents and siblings not to contravene social norms by reading MSN conversations or SMS text messages, ("*My mam doesn't go through my messages but she goes through my little sister's and I kick off with her, for going through my sister's cos I know I wouldn't like it done to me."* Female, 15-18 years; "*My sister just wouldn't take my phone."* Male, 15-18 years).

Trust is a fundamental aspect of each of the existing models of computer mediated communication. The SIDE model for example assumes that a shared personal identity exists for communication to occur and relationships form (Spears, Lea & Lee 1990). The social information processing model however works on the theory that future interaction is anticipated. What the current framework does is to identify trust issues faced by and dealt with by young technology users, behaviours that do not fit within these existing models.

4.3.2.6 Privacy

Trust then is intrinsically linked to privacy for these young participants. Privacy is another issue identified within the current framework that is accounted for within extant models. All age groups were pleased with the ability to maintain a sense of privacy from non- trusted others by adjusting settings on MSN messenger ("*The good thing about MSN is that you can block people*" Female, 14-16 years) as well as developing a sense of independence by increasing privacy from parents and siblings. Equally, privacy was also discussed as a factor to be considered by service providers intent on equipping mobile telephones with tracking devices. Many of the young people who took part were unaware of the possibility of a tracking device being a feature on their mobile telephone. Some of the older participants were aware that the police were able to identify the last place a mobile telephone was used by accessing records of location of the last transmitter used by the phone. All participants thought this was appropriate under certain circumstances but all expressed dismay at the idea of being tracked personally, (*"I wouldn't like it in case they were following us or something"* Male 9-11 years; *"Good if you are missing but bad because if you are with your mates and your mum or dad want to know where you are and you get some person ringing you up asking you where you are that would be quite embarrassing."* Female, 12-14 years). Interestingly, older participants felt that it was appropriate to incorporate a tracking facility on young children's mobile phones, (*"Well, you have to be able to keep them safe don't you?"* Male, 15-18 years). What is interesting here is the sense of outrage at being tracked but the sense of acceptance that it was appropriate in certain circumstances.

4.3.3 Negative Aspects of technology use

There were a variety of negative aspects linked to technology use identified in the focus groups such as lying and deception as well as negative social

behaviours such as bullying and exclusion. Other topics appeared within this category despite having been referred to in a previous category e.g. tracking which was seen in a negative context by older participants wanting to be independent, but paradoxically viewed in a positive light if it was related to child safety. Gossip was also a topic which appeared in both negative and positive aspects of technology use. It was seen as positive in terms of gossip being a social tool and one of the main reasons for maintaining contact with friends. It was also referred to in a negative context, (*"I don't pass on gossip because I don't think that is right and we are not lasses"* Male, 15-18 years). It is the inconsistent nature of these themes that demand further investigation. Current models of computer mediated communication would suggest that lying deception and exclusion are required elements fundamental to the mechanics of mediated communication. The framework described here suggests that young people are manipulating information dependent upon the recipient of the information. In so doing the aim of the young user in this study is to exhibit socially responsible as well as morally sound behaviours as described in the following sections and this deserves further scrutiny.

4.3.3.1 Bullying, Lying & Deception

Bullying was one of the most interesting results to emerge from the data. In recent years, since the emergence of video capability on mobile telephones, there has emerged a phenomenon paradoxically named 'Happy Slapping'. This is an extreme form of bullying involving mobile technology where assaults are recorded on phones equipped with video cameras and then distributed via multi-media messaging service (MMS) or posted on to the web via You Tube and it seems that the media can't get enough of the moral panic that is gripping the UK at the moment. The results from this study however indicate that many children did not know what 'Happy Slapping' was and their reaction should they encounter such a phenomenon would be to share that information immediately

by informing a parent or other responsible adult, (*"I haven't been sent any Happy Slapping. If I did I would tell my Mam and ring the police so they knew."* Female, 9-11 years). Clearly this is good news in a society seemingly intent on demonizing the youth of today, furthermore, all of the incidences of bullying mentioned in the focus groups were discussed in a socially and morally responsible manner in that participants felt the appropriate response to any bullying was to alert an adult (parent/teacher/police officer).

Although deception was used by young people when communicating with parents, it was described as being used in an effort to placate parents in order to reassure them of the child's perceived safety or to avoid hurting someone's feelings, (*"I would probably only lie if say I didn't want to meet up with someone or if I was in a bad mood but I didn't want to talk to anybody about it, like if I was upset then you would lie and say you were perfectly alright"* Female 15-18 years).

4.4 Conclusion

The aim of this chapter was to outline children's use of technology and identify issues important to children rather than issues deemed to be important to the young user by a parent/educator. A framework emerged that explained how the young user views, as well as makes use of the digital communication technologies available to them. The themes identified within the framework were comprehensive and relevant to each age group identified within the study and evidence is presented throughout each of the sections above to support this premise. For example it was clear that with regard to access, the youngest age group (9 -11 years) had more difficulty in access to technology than older groups but took advantage of the kindness of friends who were willing to share devices as discussed previously in section 4.3.1. Sharing is another recurring theme identified within the framework demonstrated above by younger

participants who describe experiencing restricted access to technology and continuing within the older groups who saw access as an opportunity to develop and maintain independence from adults. For older groups it was described as offering choice with regard to communication as well as interaction as demonstrated in section 4.3.1.1. The older age group also viewed sharing text messages as a way to make more friends or at the very least as a way of increasing the number of contacts available as demonstrated in section 4.3.2.3 above. So in effect even though the framework explains access and sharing as separate themes, there is a natural overlap within the framework where themes combine to enhance communication between young people regardless of their age. Furthermore this demonstrates the prosocial nature of the young user, regardless of age, being willing to share devices and information amongst friends. All ages were keen to demonstrate basic standards of behaviour and decency pointing to a fundamentally moral aspect to their behaviour.

The preliminary framework of themes identifies the crucial nature of communication for all age groups. All groups were united in their convictions that communication was the single most important aspect of technology use, (*"When I am at school I see loads of friends but when I am out of school I see hardly any but now that I have MSN I can keep in contact with them, which I wouldn't normally see them but I can talk to them which still shows that you are interested in what they are doing and that you care."* Male 15-18 years; "Well, you just want to make sure everything is still going ahead and that, you know, like meeting up and that, Female, 12-14 years"). They were also united in their belief that technology was a positive addition to their lives although the younger focus group members were less dependent than older groups whose use of communication platforms in particular was constant. Younger participants used mobile telephones for example to make specific contact for specific reasons as demonstrated here, (*"...my Dad rings us all the time cos I don't live with my dad*

and I only see him on the weekends, he rings us every day though." Male 9 -11

years). This supported the theme of control identified within the framework in

that one young user felt he was in control of maintaining his relationship with his

absent father offering further support to the idea that technology offers young

users independence and autonomy, (*"I can ring me dad when I want to cos he*

doesn't live with us." Male, 9 -11 years). Control was viewed from a different

perspective by older participants. Older groups saw technology as offering them

choices as to whom they might choose to interact with as demonstrated in

section 4.3.2.1.

It was interesting to note that all young users in this study were fully aware of

the safety issues and concerns of parents and carers. Those in the 9 – 11 years

group alluded to safety discussing how they would react to incidences of

receiving inappropriate content, (see 4.3.3.1) as well as personal safety issues

as outlined in section 4.3.2.5. Older users were fully aware of the safety issues

surrounding technology use for themselves in terms of personal safety from

predators as well as physical safety e.g. being challenged for their mobile

devices which they acknowledged were both expensive and desirable (see

4.3.2.2.). Trust was described differently by younger and older users with

younger users referring to sharing information with adults as a function of trust

(see 4.3.2.5) whilst older users view trust as linked with privacy as an implicit

element of social norms. There were some elements of concordance however

with all groups referring to sharing information i.e. trusting friends with gossip for

example. This is demonstrated in the comments presented by all participants,

(*"Rumours and that? Yeah I do it all the time!* Male, 9 – 11 years; *Passing on all*

the gen? That's what it's all about isn't it? Male, 12 – 14 years; *I don't pass on*

gossip, it's not right, we are not lasses you know! Male 15 – 18 years*"*)

In the main, the topics identified here form the basis of group membership and are fundamental to the development and maintenance of communication between peers. The themes described within that framework contain important issues that when viewed separately can be explained in terms of any of the existing models of computer mediated communication. For example, Reicher's (1984) SIDE model is supported by users' objective to achieve social inclusion, demonstrated by the desire for constant communication as described within usage preferences. However, this model relies on deindividuation, a loss of self awareness dependent upon anonymity as well as a reduced sense of responsibility and the salience of a shared identity. The framework identified here includes themes that cannot therefore be explained. For the young technology user, the conditions demanded are seldom met especially when young users are sharing devices as well as information such as secrets or sharing gossip amongst each other. The lack of visual cues does not render the young user anonymous.

Walther's (1993) SIPT model is supported by the participants' description of using text–based information to control relationships as outlined within the positive aspects section of the suggested framework above whilst the hyperpersonal model (Walther, 1996, 1997) is also supported in particular by the view that hyper-negative behaviour exists in computer mediated communication as demonstrated by the negative aspects of technology use outlined within the framework. The problem with those existing models is that they were never designed to account for communication by young people and whilst they all address some of the issues within the framework, no single model successfully accounts for all of the issues identified by these young users. The framework identified in the current study offers an opportunity to remedy this with a preliminary yet comprehensive basis for further investigation.

When examined more closely, the issues outlined in the framework identified in Table 4.1 can be broadly split along social and moral theme with social aspects of technology outweighing moral aspects by two to one. This can be observed within the supporting quotes for each of the themes identified. The social facet is apparent within all the themes identified and is demonstrated by all participants in the study regardless of age. For example, usage preferences are described in terms of access to technology and communication being vital and positive aspects of technology use encompasses not only communication but friendship, honesty, sharing, and trust, all essential elements of social behaviour and development. These are all issues identified within the framework that are geared towards basic prosocial behaviours such as social inclusion and group membership . Negative aspects of technology use are also relevant to social inclusion and acceptance through gossip as well as deception. The main objective of all participants regardless of age was communication with a view to establishing or maintaining group membership. Deception, which at first glance may be viewed as undesirable was described in terms of establishing independence from parents whilst maintaining relationships with friends and peer networks confirming the contention that the framework has a largely social aspect.

Moral behaviour was equally demonstrated within many of the identified themes and the participants were eager to maintain standards of behaviour and decency. For example, younger children referred to access and ownership in terms of sharing technological devices with those who did not have access to devices otherwise. Along with sharing devices, all age groups demonstrated clear evidence of the intention to share information with an appropriate adult should the need arise, for example, if there was evidence of bullying or inappropriate content. Exclusion was explained in terms of blocking contact from

unknown or abusive others, in an effort to ensure safety and whilst sharing gossip can be described as a social tool consolidating group membership, it was also referred to as a negative element of interpersonal communication by the older male group. Trust was determined to be hugely important from both a social and moral point of view. Social development is based on trust and disclosure as described in chapter 2. Betrayal of trust whether through gossip or sharing information was seen as negative unless there was an ulterior motive, e.g. protection from physical or psychological harm, or social inclusion. There is a distinct sense of right and wrong demonstrated by the young people in this study. It is evident therefore that the topics identified in the framework are concerned with forming social relationships and maintaining group behaviour as well as contributing to the development of moral behaviour. They form a preliminary framework for understanding social and moral behaviour within the HCI agenda.

The initial aim of the focus groups was to establish whether children and young people share similar concerns to those charged with protecting them from psychological or physical harm however the data revealed a much richer base with which to continue the research within this thesis. The framework identified in the current study is a timely addition to the existing literature where extant theories have been solely based on an adult cohort. The findings in this chapter seem to fit with Reicher (1984) and Lee and Spears' (1992) social identification model of communication in that the framework identified here supports the notion that anonymity is not always negative. Older groups in particular allude to the idea that sharing information with friends leads to a widening contact list with unknown third parties. From the framework's social perspective all participants identified maintaining friendship as important which they describe as being developed through sharing of devices, information and trust. This can be

interpreted within the SIDE model as a feature of the shared personal identity that frames computer mediated communication. What the framework here shows is that the lack of individuating cues described by Spears and Lea, (1994) is negated by the trust between young people who are willing to accept that friends may share information with unknown third parties as well as each other. . What the framework does not support however is Lea and Spears' (1994, 1995) contention that correspondents construct more stereotyped and exaggerated representations of one another.

The framework refutes Walther's (1993) social information processing model of computer mediated communication. In particular Walther argues that computer mediated relationships are maintained in a similar fashion to those in a face to face environment yet take longer to develop and the focus group findings demonstrate that this is less accurate for the young user who not only is willing to share information but has the ability to continually adapt their interaction to suit the medium. The SIPT theory argues that the amount of impression relevant cues exchanged within mediated communication is slowed but this is not supported by the current study although the framework does support the model's position that correspondents take an active role in forming impressions of others by eliciting relevant information from each other.

In the past, communication between children began and ended at the school gates. The widespread availability and use of digital communication technology now let's them interact anytime, anyplace, anywhere. Perhaps unsurprisingly children have taken technology and manipulated it to suit their own needs as predicted by Fisher, (1992) and Madell & Muncer, (2005). This leads to the suggestion of widespread change within social norms and expectations. There is within the framework as described earlier, clear support for the premise that

the themes identified form the basis of group membership and are fundamental to the development and maintenance of communication between peers. Whilst there are differences between age groups with regard to their interpretation of the themes identified, each of the themes is supported by all participants, evidence of which is provided by the comments recorded in the study.

Morality is a difficult concept to define however it is demonstrated within the comments contributing to themes provided by the framework. In general there was always a sense of 'doing the right thing' described above as an intrinsic sense of decency demonstrated in the focus groups regardless of age group. For example, there was the willingness to share devices like mobile phones or games consoles for the younger participant. Honesty and secrecy was addressed and for all age groups there was consensus over letting adults, either parents or carers, know where they were or who they were with, although older age groups did admit to tailoring this kind of information on a need-to-know basis, despite this however the general consensus was that this was the appropriate course of action. With regard to positive aspects of technology use, older age groups discussed morality in terms of good manners, for example, the appropriate time to send a text message or answer a mobile phone call. They also referred to doing the right thing when discussing control and safety, particularly with regard to bullying and safety of young users, both personal as well as psychological safety. All three age groups indicated that inappropriate or unsolicited content was best dealt with by an appropriate adult.

When examined individually the themes in table 4.1 can be explained within the existing models of computer mediated communication. When examined as a whole, the majority of the themes demonstrate a social and moral aspect to the framework supported by the excerpts that led to the creation of those themes in

the first place. It is this combination of sub-themes that the existing models struggle to explain. All participants demonstrated their willingness to follow the appropriate social rules as well as safety advice and existing models do not explain this. Current models of computer mediated communication describe the absence of accepted standards of social norms but this is not reflected in the results shown here. It is the inherent sense of morality demonstrated by the prosocial nature of the behaviours described by the participants in this study that led to the study described in chapter five. Finally and perhaps more importantly, the framework identified in this chapter offers a sound basis for investigation of the communication behaviours of the young technology user. Sharing was identified by all ages as a fundamental issue. This is demonstrated in their willingness to share devices and information such as gossip, secrets. Embedded within these sharing behaviours is the assumption of trust which leads to the consideration whether technology has an impact on trust by young people and in what way any betrayal of trust might impact on their subsequent behaviour within the framework identified. The next chapter will build on these findings to examine the dynamics within communication behaviours demonstrated by young people using digital communication technologies.

Chapter 5 Young People, Trust & Betrayal

This chapter builds on the findings demonstrated in the previous study Examination of the themes identified in the study described in chapter 4 provides evidence that young people engaging in social behaviour via technology have an inherent sense of decency which is demonstrated in their motivation to share devices, information and friendship. To further investigate the nature of their feelings this chapter reports the findings of a quantitative study investigating patterns of disclosure exploring the social and moral dimensions of betrayals of privacy. The experiment carried out examines levels of trust following small scale betrayals using scenarios to investigate peer to peer disclosure habits with regard to trust and forgiveness whilst simultaneously examining any differences in trust and forgiveness between face to face and mediated communication platforms. Findings reveal that young people prefer a social dynamic when sharing information indicating higher trust and forgiveness when betrayed face to face or to a parent. Results from this chapter show that disclosure can be seen as a function of age as well as medium and supports the argument that technology promotes pro-social behaviours.

5.1 Introduction

Previous chapters have described how recent modes of computer-mediated communication, including email, blogging, instant messaging and text messaging are redefining the social networks of today's youth.   They offer quick, inexpensive channels of communication which in turn lead to increased interaction, friendships and often lead to the development of new social networks. Chapter four canvassed the opinions of young people to determine how they were using the wide array of digital devices available to them. Not unexpectedly the resounding response was that communication was the single imperative for all ages.   The previous study revealed that despite the fears of parents, educators and government, young people are reporting a moral and socially responsible manner, when interacting via technology.

Socially interactive technologies are used by young people to enhance communication amongst friends and family, to make plans with one another and

to maintain social contact outside day-to-day face-to-face interaction, (Grintner & Eldridge, (2001, 2003); Valkenburg, & Peter, (2005); Ling 2001). Gross (2004) sees Internet use amongst young people primarily as a tool for communication through email, chat rooms instant messaging and social networking spaces. It is, therefore, surprising that there have been relatively few studies that have explored the moral and social dimensions of such communication, particularly with regard to the interactions of young people. Livingstone and Bober's (2005) rigorous investigation of children's and adolescents' Internet use is an exception. They set up a large-scale UK-based study involving an in-home face-to-face survey of over 1,500 young people aged between 9 and 19 years, with additional focus group interviews and observations. Livingstone and Bober found evidence for the social benefits of email and instant messaging – keeping in constant touch with friends, seeking online advice, gossiping, flirting and making social arrangements. But they also identified areas of concern – including high exposure to pornography and violent images, and the receipt of unwanted sexual or unpleasant comments via email or text message. Perhaps more significantly for the studies within this thesis, they reported that young people were very willing to release personal information about themselves via the Internet and text, whilst also taking care to hide their online activities from their parents (63% of 12-19 year old home internet users have taken some action to hide their online activities from parents; Livingstone & Bober, 2005).

Based on the findings from the focus groups this study explores the social and moral dimensions of betrayals of privacy. Communication technologies offer quick, inexpensive channels of communication which are redefining the social networks of today's youth. SMS text messaging is used by young people to exchange information quickly and above all privately. The previous study indicated the importance of communication technology for young people and

indicated that their attitudes towards it could be broadly split into three main themes, usage preferences as well as positive and negative aspects linked with usage. When combined, the positive and negative aspects of technology use, indicated in chapter four can be further divided along social and moral dimensions of behaviour. To build on initial findings and further examine the behaviours demonstrated by young technology users a questionnaire was developed to measure the levels of trust and forgiveness felt by young people. These dimensions were chosen because of the diversity of issues relating to trust identified in the focus groups. Trust was discussed in a variety of ways, whether exchanging information and gossip between friends; supplying information on whereabouts to parents; trust in adults to deal with bullying incidents or negative content as well as trust in parents and siblings not to contravene existing social norms. This was demonstrated with comments alluding to the fact that parents and siblings would not read private text messages, MSN conversations or emails.

In the current study it is taken as read the fact that young people will use SMS messaging to pass information on to others, sometimes in the form of 'gift giving' as described by Taylor & Harper, (2002; 2003), but the study explores the idea that these acts of communication can sometimes be seen as minor betrayals, leading to a lack of trust in another individual as confidante. The study examines whether the dynamics of trust within the technologically-mediated environment are similar to those played out face-to-face. Such questions have been asked in other areas of computer-mediated communication, (Srivastava, 2005). Rocco, (1998) found that trust was less likely to be engendered via email than face to face whilst Bos, et al. (2002) reports that trust could be 'jump-started' via social chat. Furthermore, a great deal is now known about trust-dynamics in an e-commerce scenario as

compared to those that exist offline between vendor and customer and we also know a great deal about how individuals decide whether or not to trust online advice (Sillence et al 2006; Wilson et al. 2006). There is, however, precious little research examining the effect mobile technology has on trust between individuals. In the study reported below, adolescents in different age-groups were presented with a number of scenarios, each describing small privacy betrayals conducted either via text or face-to-face. In each case the impact of such betrayals on trust and forgiveness is measured. This quantitative study follows on directly from the previous chapter in which groups of young people of various ages reported that the most important aspects of friendship and the maintenance of strong relationships when using digital communication technologies are privacy and trust.

To explore the social and moral dimensions of small-scale betrayals that are executed either via text-message or happen face-to-face a questionnaire was developed in an attempt to measure the levels of trust and forgiveness felt by young people. Scenarios were chosen as an appropriate method of investigating trust and betrayal behaviours in such a way as to present issues that were identified by participants in the focus groups in chapter 4. To establish this, scenarios were grounded in the focus group discussions from chapter 4. Results indicated a general sense of prosocial and moral behaviours when it came to sharing information revealed in the resulting framework (See Table 5.1). It was deemed important to try and develop scenarios that were likely to occur naturally within a young person's day to day environment. The focus groups discussions from the previous chapter revealed the importance of communication, facilitated by sharing devices, secrets, gossip and information often leading to access to a wider social group by forwarding information to unknown contacts. It was on this basis that the scenarios were built. Scenarios were developed by determining

incidents that were generic in nature but relevant to investigating differences that might occur between face-to-face communication and mediated communication. Scenarios were not piloted due to time constraints and the difficulties of running research in schools however they were checked for naturalness by examining the information disclosed via the focus groups described in chapter 4. Based on the framework produced in chapter 4, the topics chosen were determined to be relevant to the participant groups taking part in the study through extensive discussion with the project supervisor and a group of postgraduate psychology students. Results from the previous chapter demonstrate young people's willingness to share information with friends, as well as having little objection to information being forwarded to a third party. Their justification for this was that it led to stronger ties with friends and facilitated the development of a widening contact base. In terms of the framework presented in chapter 4, the scenarios were designed to capture the following key elements:

Table 5.1: Key themes within preliminary framework for technology use by young people

Positive aspects	Negative Aspects
Communication	Deception
Control	Gossip
Friendship	Lying
Honesty	Moral
Moral	Negative content
Privacy	
Secrecy	
Sharing	
Trust	

To this end, the following scenarios were developed as demonstrated in tables 5.2 and 5.3 below. Using these scenarios participants were asked to rate betrayals of privacy committed either in a face to face setting or via SMS text message. Presenting the scenarios in such a way enabled us to investigate any significant differences in the types of information

deemed appropriate for transmission using technology versus a face to face setting.

5.2 Method

The study employed a 4 x 2 x 2 mixed design with the factors as follows: age of participant (11 - 12 years, 13 - 14 years, 15 - 16 years and 17 - 18 years); recipient of message (parent versus friend) and method of betrayal (text versus face-to-face). Repeated measures were on one factor (recipient).

5.2.1 Participants

Participants were recruited through schools in the North East of England. An opportunity sample of one hundred and eleven children between the ages of 11 to 18 years took part in the study. Informed consent was given by each participant's primary caregiver prior to any participation in the study where the participant was under 16 years. Age group was not a true independent variable as questionnaires were distributed by year group tutors within each of the three schools and collected upon completion. The age range was an opportunity sample chosen to cover the entire secondary school demographic, they were allocated to four groups according to age, 11 to 12 years, (Mean age 11 years 5 months) 13 to 14 years, (Mean age 13 years 2 months) 15 to 16 years, (Mean age 15 years 5 months) and 17 to 18 years, (Mean age 17 years8 months).

5.2.2 Materials

A questionnaire was designed (*see Appendix 2*) to investigate the sharing of sensitive information and consisted of 4 scenarios. Each scenario contained 8 items and each item was answered on a 1 – 7 Likert-format scale. The questionnaires were distributed using an independent groups design, the first based on forwarding sensitive information in a face to face setting the second

based on forwarding the information via text message. In each questionnaire the scenarios were identical as demonstrated below in tables 5.2 and 5.3.

Table 5.2: SMS-based Scenarios.

Scenario A: *Imagine that you send a text message to your friend telling them that you are feeling miserable because you have failed an important class test. You ask your friend not to tell anybody. Your friend later forwards your message to **your parents.***	**Scenario B:** *Imagine that you send a text message to your friend telling them that you are feeling miserable because you have failed an important class test. You ask your friend not to tell anybody. Your friend later forwards your message to the rest of **your circle of friends.***
Scenario C: *Imagine that during morning break a boy/girl in your school tells you that they like you very much. You send a text message to your friend telling them about it and ask them to keep it a secret. Later that day your friend forwards your message to **your parents.***	**Scenario D:** *Imagine that during morning break a boy/girl in your school tells you that they like you very much. You send a text message to your friend telling them about it and ask them to keep it a secret. Later that day your friend forwards your message to the rest of **your circle of friends**.*

The only difference between the questionnaires was that one set of scenarios was SMS based (see table 5.2) whilst the other were in face-to-face setting (see table 5.3). In scenario A the intended recipient was the participant's parent whilst in scenario B the intended recipient was the participant's circle of friends. Scenarios C and D were also identical except for the intended recipient. In scenario C the intended recipient was the participant's parent and in scenario D the intended recipient was the participant's circle of friends.

Table 5.3: Face-to-Face based Scenarios.

Scenario A: *Imagine that you meet your friend and tell them that you are feeling miserable because you have failed an important class test. You ask your friend not to tell anybody. Your friend later meets **your parents** and tells them why you are so down.*	**Scenario B:** *Imagine that you meet your friend telling them that you are feeling miserable because you have failed an important class test. You ask your friend not to tell anybody. Your friend later meets up with the rest of **your circle of friends** and tells them why you are miserable.*
Scenario C: *Imagine that during morning break a boy/girl in your school tells you that they like you very much. You meet with your best friend telling them about it and ask them to keep it a secret. Later that day **your parents** visit your friend's house and your friend tells **them** about your conversation.*	**Scenario D:** *Imagine that during morning break a boy/girl in your school tells you that they like you very much. You meet with your best friend telling them about it and ask them to keep it a secret. Later that day your friend meets with the rest of **your circle of friends** and tells them about your conversation.*

5.2.2.1 Questionnaire

The questionnaire comprised two sections: Section 1 requested demographic characteristics such as gender, age and frequency of technology use. Section 2 asked for participants' opinions on forwarding sensitive information. As there were 4 different scenarios, they were counterbalanced, scenarios being presented in random order. Using a 1 (totally disagree) to 7 (totally agree) scale, participants indicated their ratings regarding their feelings towards a friend who had passed on sensitive information to a third party. Items from the questionnaire are presented in table 5.4 with items 1, 2, 3 and 4 clustering in terms of trust and items 5, 6, 7 and 8 clustering in terms of forgiveness.

Table 5.4: Questionnaire Items

Item no.	Item	Sub-scale
1.	I feel it is acceptable for my friend to pass on the information	Trust
2.	I feel betrayed by my friend	
3.	I feel I can trust my friend	
4.	I feel I can rely on my friend	
5.	I will fall out with my friend	Forgiveness
6.	I will forgive my friend	
7.	I will continue to tell my friend secrets	
8.	I will try to get my own back on my friend	

5.2.3 Procedure

Schools agreeing to take part in the study were visited and information sheets distributed to all year groups. Informed consent was sought from participants who were aged 16+ years however parental consent was secured for participants under 16 years including assent from the latter. Questionnaires were distributed to each class during morning registration by form teachers at schools who had agreed to take part in the study. On completion the questionnaires were returned to form teachers. After three weeks the completed questionnaires were collected from the schools by the researcher and data analysed.

5.3 Results

5.3.1 Reliability Analysis

Prior to analysis the questionnaire was tested for reliability using SPSS to calculate Chronbach's alpha. Coefficient alpha values for the four scenarios ranged between 0.76 and 0.80 meeting Coolican's (1999) recommended level for Cronbach's alpha (0.75). In Scenarios A to D the questionnaire comprised two subscales, trust (coefficient alpha value 0.69) and forgiveness (coefficient

90

alpha value 0.60) reflecting the need for improvement if the study was repeated however Shoukri and Edge (1996) state that a good reliability coefficient will be between 0.4 and 0.75.

5.3.2 Descriptive Analysis

Data were analysed in two stages with demographic information calculated first revealing that within the entire sample 97.3% of participants were mobile phone owners, 85.6% used an Instant Messaging service and 21.6% used weblogs. On average, participants sent 10.97 SMS text messages and made 3 mobile telephone calls per day.

5.3.3 Inferential Analysis

As demonstrated in table 5.4 above questionnaire items fell into two subscales so following overall analysis, further investigation was carried out to determine whether there were any significant differences in trust and forgiveness within the dependent variables under scrutiny.

Initially, a mixed-measures anova was carried out to detect any overall differences in attitude towards method of betrayal, recipient of betrayed message and also whether there were any t age group differences in attitude towards small scale betrayals of trust Significant differences were detected for method as well as for recipient. Overall there were no significant differences detected for age group, (see Table 5.5 below). *(Results for analysis of individual items can be found in appendix 7 whilst results for any age group differences detected in individual items are reported in appendix 8.)*

Table 5.5 Descriptive statistics for overall trust ratings.

Method*	Mean	Std.dev
Face to face	60.16	11.23
SMS	53.74	14.98
Recipient*		
Parent	58.87	12.44
Friend	55.03	10.03
Age group	ns	ns
*< 0.05		

Table 5.5 indicates that overall, there was a significant main effect of method, $F(1, 103df) = 5.68$, $p = 0.019$ as displayed in figure 5.1 below. Participants indicated higher overall ratings for information forwarded face to face setting (Mean = 60.16, s.d. = 11.23) than forwarded via text message, (Mean = 53.74 s.d. = 14.98).
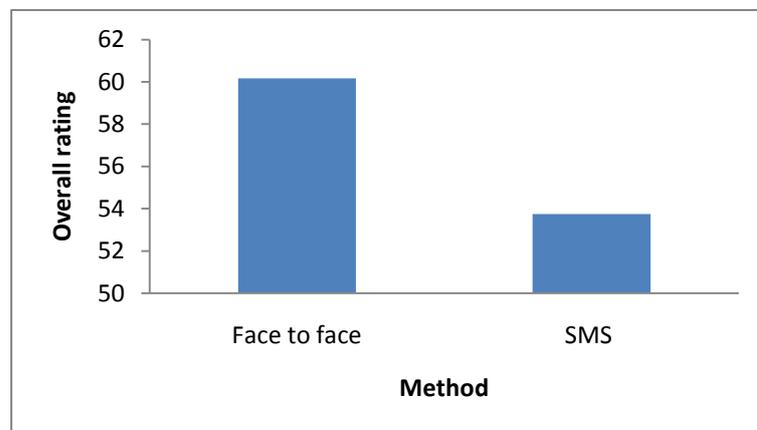
Figure 5.1: Overall mean rating for method of forwarding sensitive information

Results further indicated a significant main effect of recipient, $F(1, 103df) = 10.42$, $p = 0.002$, participants indicated higher ratings for information forwarded to a parent (Mean = 58.87, s.d. = 12.44) than to friends, (Mean = 55.03, s.d. = 10.03) which is displayed in figure 5.2.
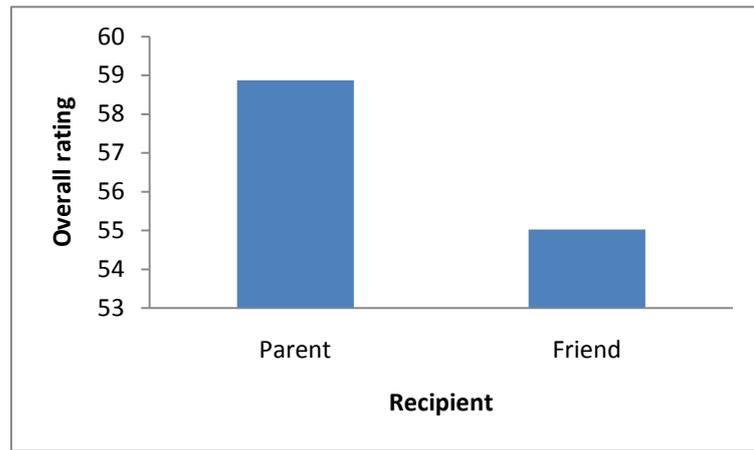
Figure 5.2: Overall mean rating for recipient of sensitive information

5.3.3.1 Trust as a function of recipient, method of betrayal and age.

Further analysis of the subscales identified revealed that there were significant differences detected in trust as functions of method of betrayal, (whether information was forwarded via SMS or face-to-face), recipient, (whether information was forwarded to a parent rather than friends) and age group as displayed in Table 5.6.

Table 5.6: Descriptive statistics for method and recipient as functions of trust and forgiveness

Method*	Trust	Forgiveness
Face to face	3.28 (0.434)	4.37 (0.877)
SMS	2.67 (0.764)	3.88 (1.07)
Recipient*		
Parent	3.15 (0.889)	4.34 (1.15)
Friend	2.80 (0.766)	3.87 (1.29)

As previously reported, no differences were detected between the four age groups in the scale overall, however, there were age differences detected within the two subscales as reported in Table 5.7.

Table 5.7: Descriptive statistics for age differences in trust and forgiveness ratings

Age group	Trust	Forgiveness
11-12 years	3.25 (1.23)	ns
13-14 years	ns	ns
15-16 years	2.44 (0.99)	4.22 (1.31)
17-18 years	ns	4.08 (0.51)
* < 0.05		

For scenario A/B (see table 5.2) there was a significant effect of method of betrayal on trust, $F(1, 103df) = 9.03$, $p = 0.003$) as displayed in Figure 5.3 which demonstrates that participants were significantly more likely to trust a friend who had passed on the fact that they were feeling miserable because they had failed a class test in a face to face setting (Mean = 3.28, s.d. = 0.434) than via text message (Mean = 2.67, s.d.= 0.764).
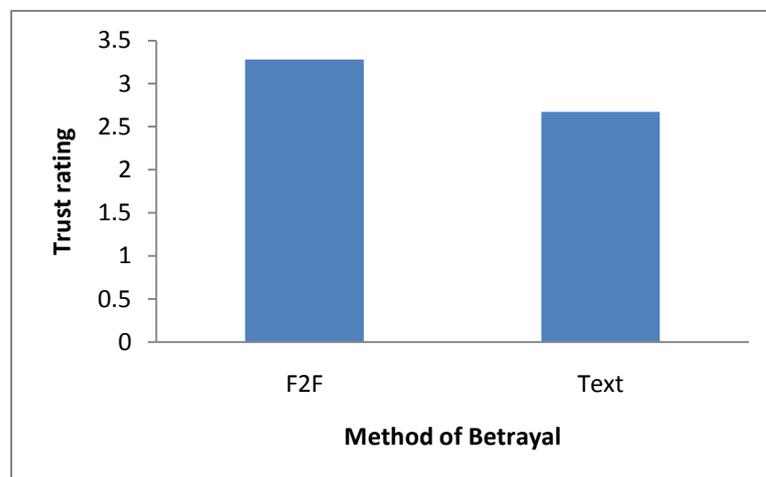
Figure 5.3: Mean ratings of trust for method of forwarding sensitive information

The main effect of recipient on trust, $F(1, 103df) = 6.49$, p = 0.012 indicated that participants were significantly more likely to trust a friend who had forwarded

sensitive information to a parent, (Mean = 3.15, s.d.= 0.889) than to friends, (Mean = 2.80, s.d. = 0.766) as displayed in Figure 5.4 below.
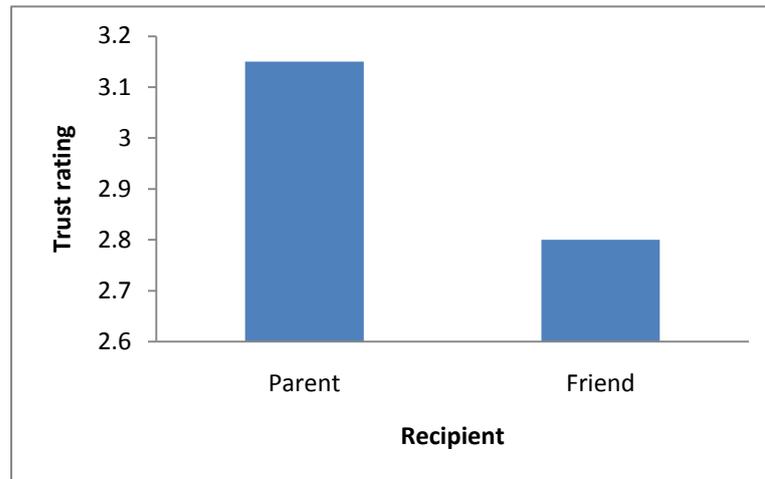
Figure 5.4: Mean ratings of trust for recipient of sensitive information

There was also a significant main effect of age on trust, ($F_{(3,103df)}$ = 3.15, p = 0.028). Post hoc analysis to locate the differences between age groups on trust revealed significant differences between those in the 11 - 12 years age group (Mean = 3.25, s.d. = 1.23) and those in the 15 - 16 years age group (Mean = 2.44, s.d. = 0.988), p = 0.04 as demonstrated in Figure 5.5.
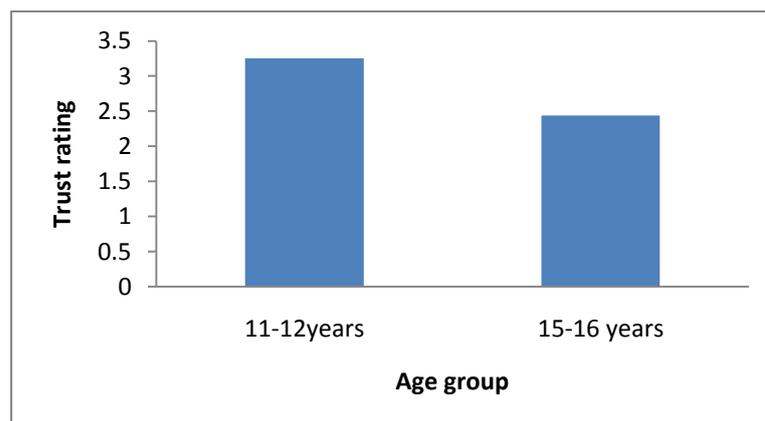
Figure 5.5: Mean ratings of trust for age group forwarding sensitive information

5.3.3.2 Forgiveness as a function of recipient, method of betrayal and age

Data analysis further revealed a significant difference in forgiveness as a function of method of betrayal and a significant difference in recipient of forwarded information (see Table 5.6) as well as an interaction effect of *Recipient x Method x Age* on forgiveness.

For scenario A/B there was a significant main effect of method of betrayal on forgiveness $F(1,103df) = 5.09$, $p = 0.026$. Participants were significantly more likely to forgive a friend who had passed on the fact that they were feeling miserable because they had failed a class test in a face to face setting (Mean = 4.37, s.d. = 0.877) than via text message (Mean = 3.88, s.d. = 1.07) as displayed in Figure 5.6 below.
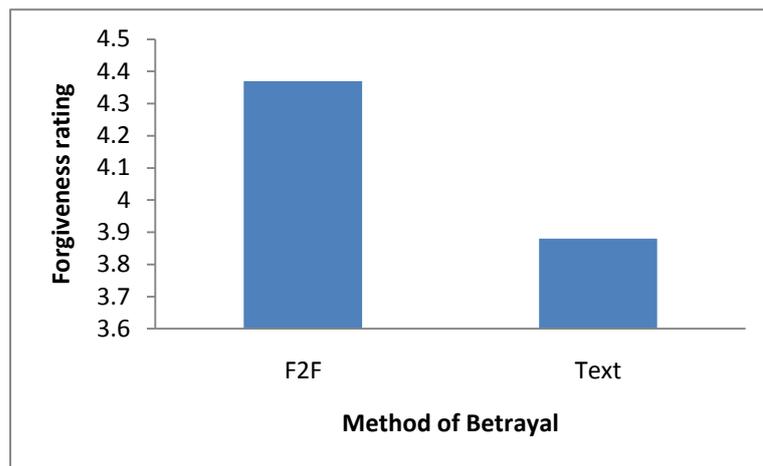
Figure 5.6. Mean ratings of forgiveness for method of forwarding sensitive information

There was a significant main effect of recipient on forgiveness, $F(1,103df) = 23.72$, $p < 0.001$. Figure 5.7 demonstrates how participants were significantly more likely to forgive a friend who had forwarded sensitive information to a parent (Mean = 4.34, s.d. =1.15) than to friends (Mean = 3.87, s.d. = 1.29).
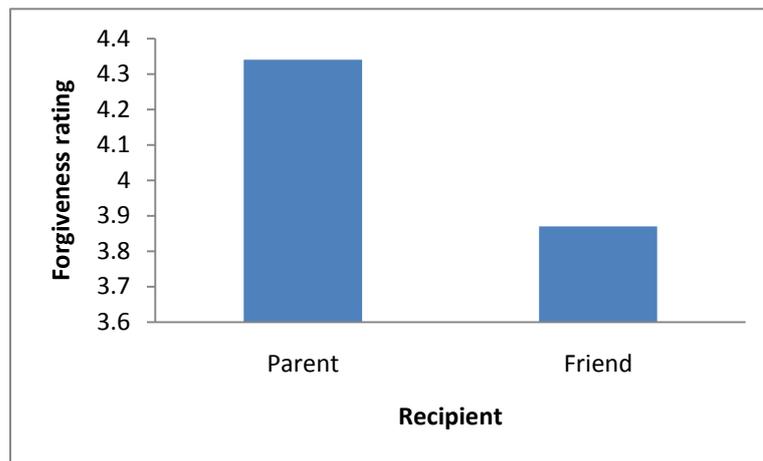
Figure 5.7. Mean ratings of forgiveness for recipient of sensitive information

Finally, there was a significant interaction effect between recipient, method and age on forgiveness, $F(3,103df) = 3.81$, $p = 0.012$. In a face to face setting, only those in the 17 - 18 years age group indicated that they were significantly more likely to forgive a friend who had forwarded sensitive information to a parent (Mean = 4.54, s.d. = 0.433) than to friends (Mean = 3.61, s.d. = 0.587). Those in the 15 to 16 years age group were significantly more likely to forgive someone who forwarded the information via text message to a parent (Mean = 4.48, s.d. = 1.644) than to friends (Mean = 3.95, s.d.= 0.977).

5.4 Discussion

Findings in the previous revealed a framework of issues important for young people communicating via digital technology. Themes identified from that study indicated the vital need for communication which was based around establishing and maintaining friendship facilitated through sharing information as suggested by existing models of computer mediated communication. Consideration of the themes identified and the supporting excerpts supplied by participants indicated that sharing was grounded in a variety of themes. The combination of themes identified in the framework demonstrates behaviours not fully addressed by current models of computer mediated communication. The participants in the

previous study display an overarching willingness to engage in prosocial behaviours suggesting a social and moral aspect to the themes identified. It is this combination of behaviours that the existing models struggle to explain. As reported previously, current models of computer mediated communication describe the absence of accepted standards of social norms and the framework in the previous chapter indicates that this is not the case and so demands attention. Based on key themes identified in that framework the current study set out to explore. sharing behaviours relating to issues of privacy and trust (see Table 5.1) and examine the idea that using SMS messaging to forward sensitive information can sometimes be seen as a betrayal of confidence. Participants' levels of trust and forgiveness in a confidante were examined following the exchange of information.

Initially the data were analysed for the scale overall. Significant differences were detected for method of betrayal i.e. face to face or via SMS. Participants indicated higher trust ratings when information was forwarded in a face to face setting rather than via SMS. Furthermore there were significant differences detected for recipient i.e. whether the information was shared with a parent or a friend. Participants indicated higher trust ratings when the information was shared with a parent rather than a friend. This indicates that the dynamics of trust and betrayal differ as a function of modality, i.e. the technologically-mediated-environment versus face-to-face interaction. Results indicate that under certain circumstances, young people are willing not only to forgive small scale transgressions of privacy but also to maintain trust in the person who passed on the information. Participants' ratings indicate significantly lower levels of trust when a confidence has been betrayed via text message and higher levels of trust if the betrayal was face to face as displayed in figure 5.1. This result suggests that despite the almost constant reliance on technology to

communicate, adolescents prefer a social dynamic when sharing sensitive information this supports Rocco's (1998) position that trust is less likely to be engendered via email. This can be related to previous findings described in chapter 4 where focus group study participants described how a face to face dynamic can be verified as being one-to-one whereas forwarding information via text message entails the risk of sensitive material being sent to multiple recipients. This refutes the premise of existing cues filtered out models of communication (Culnan & Marcus 1987) that communication is depersonalised and decreases awareness of others. Communication via technology removes a level control from the sender, facilitating the disclosure of information to any number of recipients. Control of disclosure has been demonstrated as important to young people engaging in online communication, (Christofides, Muise & Desmarais 2009) with trust predicting information control. This finding relates strongly to Walther's social information processing theory as it offers support to the premise that computer mediated relationships take longer to establish than face to face relationships. The exchange of information is slower as there is a greater need to establish trust in the respondent. From earlier literature Boyd, (2003) describes how trust is more difficult in an environment of reduced social cues, and the result demonstrated here would support that suggestion. Furthermore it supports the notion that synchronous communication facilitates a kind of reaction detection as suggested by Walther's (1996) hyper-personal model of communication which explains how computer-mediated-communication is characterized by reduced visual, aural and contextual cues. The young people in this study prefer to witness the consequences of hyper-personal communication indicating that whilst Walther's theory is particularly relevant for children and adolescents engaging in computer-mediated-communication, betrayal of trust will reduce the compatibility of the hyper-personal model with young users' behaviour.

Overall there were no significant age differences detected for method of betrayal and equally no difference in age based on recipient of message. This indicates that the themes identified in the previous study are relevant throughout childhood and the finding supports the relevance of the framework to all age groups. In terms of recipient, participants indicated higher ratings for information forwarded to a parent than a friend. This suggests that they are more comfortable sharing information within the context of pre-existing relationships. This is contrary to the premise of existing models of computer mediated communication that are based on anonymity, Current models assume that they account for all computer mediated communication regardless of age of user but do not account for the idea that young people prefer familiarity rather than anonymity.

Table 5.4 demonstrates two subscales within the original measure, namely trust and forgiveness. With regard to trust significant differences in trust ratings were detected as a function of method of betrayal as well as a function of recipient of information confirming overall results. Participants were much more likely to trust a friend who had forwarded information in a face to face setting. One caveat is that this finding was only detected in the first scenario A/B. This might suggest that trust is based on the type of information being forwarded to a third party. The result refutes the assumption of anonymity required by existing models and is confirmed by the additional finding that participants were significantly more likely to trust a friend who had forwarded sensitive information to a parent than a friend. Young people are clearly more comfortable within a social dynamic but their willingness to continue to trust minor betrayals of confidence lends support to the assertion that the framework encompasses inherently socially and morally responsible behaviour.

Initial analysis of the result displayed in figure 5.3 might seem anomalous as it demonstrates that adolescents are happier to trust someone who has forwarded sensitive information to a parent than to friends. This seems incongruent in the light of Livingstone's (2005) findings that young people are careful to hide information from their parents. On reflection however when we consider the scenario that has been presented: *(Imagine that you meet your friend and tell them that you are feeling miserable because you have failed an important class test. You ask your friend not to tell anybody. Your friend later meets your parents and tells them why you are so down.),* it is highly likely that a parent might offer more useful support than a friend. Furthermore, a parent is unlikely to use the information in a negative way. For instance, a parent is far less likely to make fun of the fact that you have failed a test, whilst a friend might be able to use the information as a weapon if, in future, the friendship soured. In all, then, the decision to trust someone who has forwarded sensitive information to a parent than to a friend reflects a more socially responsible action. Furthermore the results here confirm Joinson et al's (2010) findings that high levels of trust compensate for low privacy, as lower levels of privacy is a small trade off for an unconditional trust relationship with a parent. The findings confirm the findings of the preliminary framework presented in the previous chapter that communication, control, as well as trust are issues deemed important to young technology users.

Age was a significant factor in how strongly betrayal is felt by users. Figure 5.5 indicates that age is a significant factor when considering trust in friendships. Fifteen and sixteen year olds in particular are significantly less likely than any other age group to trust someone who has forwarded sensitive information. It is conceivable that this may be due to this particular age group being increasingly protective of their privacy because they are at a particularly sensitive stage of

development. This further supports findings from Joinson, et al (2010) who report an inverse relationship between trust and privacy in online exchange. This finding could, however, also be interpreted as 15 and 16 year old adolescents being the age group that is maximally interested in creating distinctive social identities for themselves as distinct from their family in an effort to elicit peer group acceptance. The results seems to indicate that for younger users in particular, intimacy is fostered and then if lost, often restored regardless of betrayal but this is severely reduced for those in the most sensitive stage of adolescence. This might also be explained by Walther as being due to the intimate nature of hyperpersonal communication deeming such betrayal as highly embarrassing. The result could be explained as being a consequence of social development as described earlier in chapter three insofar as children in this age group are striving to establish a social identity as well as acceptance amongst peers and will be therefore be far more sensitive to betrayals of trust. The finding also support Bane et al, (2010) who found that whilst participants report close online friendships, they perceive face-to-face friendships as possessing intimacy-promoting interaction patterns.

The result confirms the findings from the focus group study in the previous chapter and relates to the themes identified within the framework i.e. that there is control in a face to face setting that does not exist via computer mediated communication. This supports the premise that existing models of communication need to be extended to examine the differences in the communication habits and behaviours of the young user.

Consistent with trust findings, participants also indicated significantly higher ratings of forgiveness for a friend who has forwarded sensitive information to a parent rather than to their circle of friends (see figure 5.7). This result can be viewed as fitting snugly within the existing literature that suggests that trust and

forgiveness are dynamically linked (e.g. Vasalou & Pitt 2005; Briggs & Marsh 2006). Further evidence supporting our initial findings is presented in Figure 5.6 which uses a different scenario *(Imagine that during morning break a boy/girl in your school tells you that they like you very much. You send a text message to your friend telling them about it and ask them to keep it a secret. Later that day your friend forwards the information to the rest of your circle of friends).* This demonstrates that participants are significantly more likely to forgive a friend who has betrayed private information in a face to face setting rather than via text message, suggesting that the use of text messaging to convey sensitive information is perceived as insensitive and reinforcing the view that adolescent forgiveness, like trust, prefers a social dynamic. Existing models insist that participants ought to display a lack of trust following a betrayal for example the hyperpersonal model of computer mediated communication where intimacy of information leads to feelings of betrayal. The results in this study offer scope for further investigation within the realms of alternative media such as weblogs and social networking sites.

Clearly adolescents are sensitive to betrayals of trust but are willing to maintain a friendship with the betrayer in certain circumstances. Significantly higher levels of both trust and forgiveness are indicated if the betrayal takes place in a face-to-face setting. This suggests a naive perception that the information will not be passed on any further by the friend passing on the information in the first place, or passed on any further by the recipient of that information.

Higher levels of trust and forgiveness when information is passed on face-to-face may relate to the transferable nature of text messages i.e. the fact that they may be more easily shared with a larger number of people. This is the adverse side of the 'gift-giving' culture described by Taylor and Harper (2002) and

reflects communicative content as a commodity to be distributed to best advantage. Not enough is yet known about such aspects of 'trading' messages and the advantages that trading accrues.

A consistent finding is that young people are willing to forgive and maintain trust in a friend who forwards information to a parent rather than another friend. It is possible to interpret this result in terms of maintaining status within the peer-group. During adolescence controlling the information being shared with one's peer-group is far more important than the control of information being shared with one's parents. For example, as a teenager it is of little consequence if a parent knows you are still afraid of the dark, information that might destroy one's standing within a group of friends should the information be shared.

In summary, although intensely protective of their privacy, young people are willing to forgive privacy betrayals under certain circumstances. In direct contrast to Livingstone's (2005) findings, our results demonstrate that young people are willing to trust and forgive those who share sensitive information with their parents. Our current findings also echo Barkhuus' (2005) assertions that mobile phone technology can often lead to pro-social behaviours in the young. Our research paints a different picture from that presented in an array of research investigating the negative effects technology has upon the young. It seems that today's young people and their behaviour may be much more agreeable than some research would have us believe. It may be that technology is not influencing the youth of today in an entirely negative way but can also elicit admirable pro-social behaviours. The results support the preliminary framework suggested in chapter 4 by demonstrating the themes proposed by the framework are those deemed important to the young user particularly when it comes to trust and forgiving any betrayals of trust which are the very bedrock of

establishing and maintaining a relationship. One caveat however, demands attention, namely that the study elicited self-reported *attitudes* which may be prone to socially desirable responding - and thus the conclusion must concede that more research on the communicative *behaviours* of young people would be valuable.

Existing models of computer mediated communication are grounded in anonymity, resulting in termination of contact if behaviour is not deemed reciprocal. These findings are refuted by the results presented thus far in this thesis. The framework identified in chapter 4 identifies that young people display a variety of behaviours and engender particular concerns when communicating via technology. The extant models do not unpick these concerns in any way and are in fact based in generalisation with regard to all technology users. Rather than accept this the current thesis has identified that there are areas within existing models of computer mediated communication that demand further scrutiny, in particular sharing information, willingness to forgive transgressions of trust and the sense of morally responsible behaviour displayed by the young. To that end, it seems pertinent to further explore the relevance of the preliminary framework offered in chapter four and extend the current study to examine whether an adult cohort would respond in a similar manner to the young population sampled here and investigate the claims of anonymity posited by accepted models of computer mediated communication.

Chapter 6: Adult patterns of disclosure to trusted others; the rise of friends/relationships outside home/parents

Chapter six mirrors the experiment presented in the previous chapter in that it examines adult patterns of disclosure using a similar study to determine whether adults also prefer a social dynamic when exchanging sensitive information and whether adult behaviour challenges existing models of computer mediated communication. Based on the framework identified in chapter 4 scenarios were developed to encompass key themes relevant to young technology users and utilise them to investigate their relevance to an adult cohort. It is predicted that adults ought to display a lack of trust following a betrayal as suggested by the hyperpersonal model of computer mediated communication where intimacy of information leads to feelings of betrayal. Results support findings from chapter five, adults indicate that they will continue to trust and forgive a betrayal providing the recipient is a close friend however there is no effect of method suggesting that adults have no preference for a social dynamic when sharing sensitive information. This is explained in terms of the hyperpersonal model and confirms that adults take an active role in disclosure of personal information.

6.1 Introduction

Whilst the rapid growth of mobile technology is remarkable, the amount of social science research in the area is relatively small when compared to other pervasive communication technologies, such as the Internet for example (Rice and Katz, 2003). To date, there is a distinct lack of literature addressing the effects of the content of messages sent via mobile telephone on the user. Some research has focused on the impact of the mobile telephone on society (Pertierra 2005; Ling 2004), on relationships, (Taylor & Harper 2002; Byrne & Findlay 2004) and neuropsychological effects, (Keetley et al. 2006). It is both fortunate and timely therefore that there is an increase in research addressing the social implications of mobile communication (Katz, 2003; Katz and Aakhus, 2002; Ling, 2004).

Research from the previous chapter employed a scenario-based questionnaire to examine the social and moral dimensions of betrayals of privacy with young adolescents. Exploring levels of trust and forgiveness results indicated that adolescents are willing to forgive small scale transgressions of privacy and trust under certain circumstances. For them, trust was affected by choice of recipient; children indicated higher trust ratings if sensitive information was shared with an authority figure (in this case a parent) rather than with a friend. Participants in the previous study also indicated that trust was affected by method of betrayal, indicating higher levels of trust when the information was forwarded in a face to face setting rather than via SMS text message. In terms of forgiveness, participants responded in a similar manner, for young people, forgiveness was affected by choice of recipient. Participants indicated higher ratings of forgiveness if sensitive information was shared with a parent rather than with a friend. Forgiveness too was also affected by method of betrayal, children indicating higher forgiveness ratings if the information was forwarded face to face rather than via SMS text message. In addition, all age groups but one (15-16 year olds) were more likely to forgive forwarding sensitive information to a parent regardless of how the information was forwarded i.e. via SMS or in a face-to-face setting. Those in the 15-16 year age group indicated they were more likely to forgive a small scale betrayal if the message was forwarded to a friend rather than a parent in both text and face to face settings. It is suggested that this result is due to the sensitive nature of parent-child relationships and the growing need for autonomy within this stage of development described in chapter three. Finally, the youngest children in the study (11-12 years) indicated higher trust levels when betrayed than their older counterparts, that is to say that the younger participants were more likely to forgive small betrayals than older children. This might be explained by younger participants placing much less importance on friendships than older participants who are beginning to value

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particular friendships, being more sensitive to betrayals of trust, thus contributing to the supporting evidence for Walther's (1996) hyper-personal model of communication.

From a developmental perspective these results demand attention. The younger the child, the more likely they are to forgive a transgression and continue to trust you with confidences. Only those in the most sensitive stage of development in terms of peer relations and group acceptance (i.e. between fifteen and sixteen years of age) demonstrated an unwillingness to forgive such transgressions. If the hyperpersonal model is accepted as offering a viable explanation for those findings, then adults ought to demonstrate similar results to those teenagers and be unwilling to forgive betrayals of confidence. It is sensible therefore to investigate whether these results are indicative of the behaviours displayed by adults who have confided in a friend only to find they have been betrayed. If the hyper-personal model is valid in this instance, then the findings from an adult cohort ought to contradict the findings in the previous study and indicate a lack of trust and forgiveness when betrayed.

6.2 Rationale

Apart from the current thesis, there is little interest or investigation of the implications of communicating via SMS text message and how it relates to user behaviours and attitudes. Some 85% of the adult population in the UK now have a mobile and it has become the device that we would not leave home without. It is argued that mobile phone use enables society to function more efficiently than ever allowing communication to be 'compatible with spatial mobility' (Geser 2004). The increasing capabilities of the mobile telephone challenge Ling's (2004) suggestion that mobile telephony is more accessible than the Internet as outdated, especially now that most devices offer Internet access as standard.

Due to the paucity of research investigating the nature of betrayal and its effect upon trust and forgiveness as a function of different media, the current study was carried out to ascertain whether young adults would respond to betrayals of privacy and trust in the same way that the children had in the previous study. The current investigation is not a true replication of the previous study as it was necessary to adapt the scenarios for an adult cohort. As described in chapter 5, scenarios were chosen as an appropriate method of investigating trust and betrayal behaviours. For the adult cohort it was deemed important to try and develop scenarios that matched as closely as possible those presented to the young participants in the previous chapter but that were realistic enough to occur naturally within an adult's day to day environment. Scenarios were checked for naturalness by referring to the information disclosed via the focus groups described in chapter 4 and encompassed the themes from the framework presented previously (refer to Table 5.1). The topics chosen were determined to be relevant to the participant group taking part in the study through extensive discussion with the thesis supervisor and informal debate between the author and a group of six postgraduate students. To this end, the following scenarios were developed as demonstrated in tables 6.1 and 6.2 below. It is predicted that adults will be willing to forgive betrayals of trust depending upon type of recipient.

6.3 Method

6.3.1 Design

The study employed a 2 x 2 mixed design with recipient (close friend versus distant acquaintance) manipulated as the repeated measure and method of betrayal (face-to-face or SMS text message) as the independent measure. The dependent measure was score on a questionnaire.

6.3.2 Participants

An opportunity sample of sixty first year psychology undergraduate students from Northumbria University took part in the study in return for partial course credit. Participant sample comprised 30 females (mean age 19 years 6 months) and 30 males (mean age 20 years 2 months).

6.3.3 Materials

A questionnaire was designed (*see Appendix 3*) to investigate the sharing of sensitive information. The questionnaire consisted of 4 scenarios (*see Table 6.1*). Each scenario contained 8 items and each item was answered on a 1 – 7 Likert-format scale where 1 = totally disagree and 7 = totally agree, (Likert, 1932). Two versions of the questionnaire were distributed, the first based on forwarding sensitive information in a face to face setting, the second version based on forwarding sensitive information via SMS text message (*see Table 6.2)*. In both the face to face and SMS versions of the questionnaire scenarios A and B were identical except for the intended recipient; scenarios C and D were also identical except for intended recipient as demonstrated below. Scenarios were created based on the rationale presented in section 6.2.

Table 6.1: Face-to-Face based Scenarios.

*Scenario A: Imagine that you tell a friend that you are distressed because you have been unfaithful to your partner. You ask your friend not to tell anybody. Your friend later meets a group of people **outside** your close circle of friends and tells them your secret.*	*Scenario B: Imagine that you tell a friend that you are distressed because you have been unfaithful to your partner. You ask your friend not to tell anybody. Your friend later meets with a **mutual friend** and tells them your secret.*
*Scenario C: Imagine that you meet with your work colleague telling them about an embarrassing medical problem asking them to keep it secret. Your friend later meets your **employer** and tells them about your conversation.*	*Scenario D: Imagine that you meet with your work colleague telling them about an embarrassing medical problem asking them to keep it secret. Your friend later meets with a **mutual friend** and tells them about your conversation.*

Table 6.2: SMS text message based Scenarios.

***Scenario A: Imagine** that you send a text message to a friend that telling them that you are distressed because you have been unfaithful to your partner. You ask your friend not to tell anybody. Your friend later forwards your message to a group of people **outside** your close circle of friends.*	***Scenario B: Imagine** that you send a text message to a friend telling them that you are distressed because you have been unfaithful to your partner. You ask your friend not to tell anybody. Your friend later forwards your message to a **mutual friend.***
Scenario C: Imagine** that you send a text message to a work colleague telling them about an embarrassing medical problem asking them to keep it secret. Your friend later forwards your message to your **employer.	***Scenario D: Imagine** that you send a text message to a work colleague telling them about an embarrassing medical problem asking them to keep it secret. Your friend later forwards your message to a **mutual friend.***

6.3.3.1 Questionnaire

The questionnaire comprised two sections: Section 1 requested demographic characteristics such as gender and age as well as frequency of technology use. Section 2 asked for participants' opinions on forwarding sensitive information using the scenarios presented above. Using a 1 (totally disagree) to 7 (totally agree) scale, participants indicated their ratings regarding their feelings towards a friend who had passed on sensitive information to a third party. In the final two scenarios, participants were asked to rate to whom they were personally most likely to forward information, furthermore they were asked to justify those choices, again using the 1 (totally disagree) to 7 (totally agree) scale. Items from the questionnaire are presented in table 5 with items 1, 2, 3 and 4 clustering in terms of trust and items 5, 6, 7 and 8 clustering in terms of forgiveness.

Table 6.3: Questionnaire Items.

Item no.	Item	Sub-scale
1.	I feel it is acceptable for my friend to pass on the information	Trust
2.	I feel betrayed by my friend	
3.	I feel I can trust my friend	
4.	I feel I can rely on my friend	
5.	I will fall out with my friend	Forgiveness
6.	I will forgive my friend	
7.	I will continue to tell my friend secrets	
8.	I will try to get my own back on my friend	

6.3.4 Procedure

Informed consent was sought from each participant. Questionnaires were distributed to each participant on an appointment basis. Participants returned the completed questionnaire to the researcher in return for points towards course credit. Prior to analysis the questionnaire was tested for reliability using SPSS. Coefficient alpha values for the scenarios ranged between 0.66 and 0.80, mean alpha = 0.73. These values do not reach the required Cronbach's alpha level of 0.75 recommended by Coolican (1999) reflecting the need for improvement to the items if the study were to be repeated. On this occasion time constraints forbade any alterations to the items or distribution to a wider sample. Within the four scenarios A to D the questionnaire comprised two subscales, trust with a coefficient alpha value 0.68 and forgiveness with a coefficient alpha value 0.69, again these values demand attention.

6.4 Results

Demographic information revealed that within this sample, 98% participants owned a mobile phone, 78% were regular users of an Instant Messaging service whilst 41% used weblogs. There was a relatively even split between those with a contract deal (52%) and those who used the pay-as-you-go option

(48%). On average participants made 7.65 calls and sent 22.5 SMS text messages per day.

A mixed-measures analysis of variance was applied to the data to detect any differences in attitude towards method of betrayal, recipient of betrayed message summarised in Table 6.4.

Table 6.4 Descriptive statistics for overall trust ratings.

Recipient*	Mean	Std.dev
Close Friend	55.25	18.67
Acquaintance/ Employer	50.95	14.98
Method	ns	ns
* < 0.05		

Overall, there was a significant main effect of recipient as demonstrated in Figure 6.1, *F(1,58 df) = 4.379, p = 0.042*. Participants were more likely to forgive and continue to trust someone when their message has been relayed to a close friend, *(Mean = 55.25, s.d. = 18.67)* than an acquaintance or employer, *(Mean = 50.95, s.d. = 14.98).*

There was no significant main effect of method, *F(1,58 df) = 2.015, p > 0.05* nor were any interaction effects detected (p ≥ 0.05)*.
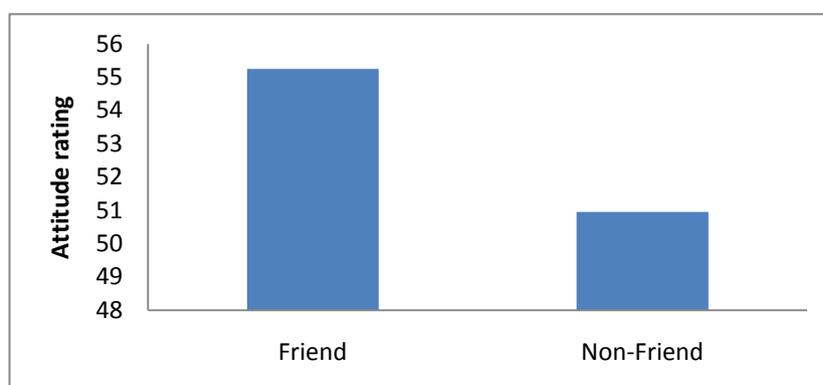
Figure 6.1: Overall trust and forgiveness ratings for betrayal of confidence

6.4.1 Trust as a function of recipient

Further analyses were performed to determine whether there were any differences in levels of trust and forgiveness as functions of method and recipient and findings are summarised in Table 6.5.

No significant difference was detected for the first scenario presented (A versus B) however there was a significant main effect of recipient on trust, $F(1,58\ df) = 14.03,\ p = 0.001$, in Scenario C versus Scenario D (whether information was forwarded to a friend rather than an employer). Participants indicated higher trust ratings when their friend had forwarded their message to a mutual friend (*Mean = 28.33, s.d. = 9.22*) than when they forwarded it to an employer (*Mean = 24.46, s.d. = 11.12*).

Table 6.5: Descriptive statistics for recipient as functions of trust and forgiveness

Recipient*	Trust	Forgiveness
Friend	28.33 (9.22)	24.12 (8.24)
Acquaintance/ Employer	24.46 (11.12)	20.70 (9.29)
*< 0.01		

6.4.2 Forgiveness as a function of recipient

Analysis further revealed for Scenario C versus Scenario D a significant main effect of recipient on forgiveness, $F(1,58\ df) = 11.83,\ p = 0.001$. Participants indicated higher forgiveness ratings when their message had been forwarded to a mutual friend (*Mean = 24.12*) than to an employer (*Mean = 20.70*) as demonstrated in Table 6.2 above. No further differences were detected

6.5 Discussion

The aim of the current study was to investigate whether adults would respond to betrayals of privacy and trust in the same way that children had in the previous study documented in chapter five. Participants' levels of trust and forgiveness in a confidante following the exchange of sensitive information were examined. From a demographic point of view, mobile phone ownership was equal, 98% adults who took part in the current study compared to 97% of children in the previous chapter owned their own handsets a fact that will encourage service providers. Not surprisingly adults made more than twice as many voice calls as children (7.65 compared with 3) and sent twice as many SMS text messages as children (22.5 compared with 11), a result most likely due to cost. Another predictable finding was that children were more likely to use an Instant Messaging (IM) service than adults (86% compared to 78%) but, at the time of writing, more adults contributed to weblogs than children (41% compared to 22%). This is an interesting finding deserving further investigation as to whether it is the synchronous nature of instant messaging appealing to the young, in favour of the asynchronous nature of contributing to a weblog as preferred by the adult cohort.

It was predicted that adults would differ from children and display a lack of trust following a betrayal and support the findings suggested by the hyperpersonal model of computer mediated communication that intimacy of information leads to feelings of betrayal. Overall the results indicate that this was not the case. For the current adult sample, findings mirror those demonstrated in the previous chapter by the young participant base. The dynamics of trust and betrayal differ as a function of recipient. Like the adolescents in the previous chapter, adults also are willing to forgive small-scale betrayals of trust and privacy. Despite the similarity of the results to those reported in chapter 5, there were marked

differences. Maintaining trust and forgiving betrayal were dependent upon the identity of the recipient of the betrayed confidence although only for the second scenario, (*Imagine that you send a text message to a work colleague telling them about an embarrassing medical problem asking them to keep it secret. Your friend later forwards your message to your **mutual friend/employer***). In direct contrast to the previous study, adults preferred a mutual friend to be the recipient of a betrayed confidence rather than somebody outside their close circle such as an acquaintance or employer. This finding is supported by Joinson et al. (2010) who report a trust privacy trade off where health information is concerned. The nature of the scenario demonstrates that it might affect one's employment status should an employer receive such information about an employee. It makes perfect sense that people would be less happy that an employer might discover such sensitive information.

With regard to the factors within the framework presented in chapter 4, this result could be explained as sitting comfortably within the positive aspects of technology use. Communication is initiated and information sharing takes place, as demonstrated previously. Furthermore, communication can continue beyond betrayal therefore friendship is maintained through trust as well as forgiveness, providing there is a level of control over the type of information being betrayed.

Betrayal to a mutual friend indicates clearly that there is no anonymity available to the subject of the message removing the features required by all of the cues filtered out models of computer mediated communication. It also removes the assumption that mediated information is depersonalised, leading to decreased awareness of others, inhibiting interpersonal relations. If anything, the results here and in the previous study indicate that the opposite is true.

Interestingly method had no effect on betrayal suggesting that adults place more importance on the content of the betrayal rather than whether it was divulged in an SMS text message or a face to face setting. That there were no differences between modes of betrayal i.e. via SMS text message as opposed to a face-to-face setting indicates that adults are not so sensitive to a social dynamic as the young people in the original study indicated. It might also point to the wider distribution of adult friendships because adults very often remain friends with those they meet during different stages of their lives and may not have the same opportunities as adolescents to meet up with friends. That adults do not require such a social dynamic to maintain friendship is supported by the finding that adults prefer contributing to weblogs, a less social dynamic it can be argued due to its asynchronous nature.

In terms of forgiveness, adults reported higher ratings where they had been betrayed to a mutual friend rather than to an acquaintance or an employer. In a similar manner to the previous result this was dependent upon the type of information. That both trust and forgiveness ratings were affected by choice of recipient might be explained in terms of self-disclosure which is seen as an important part of developing a relationship in order to establish trust, (Derlega, 1993). Walther's social information processing theory (1993) would account for this finding in terms of correspondents taking an active role in forming impressions through sharing information, with a view to further developing a face to face relationship. It is possible that scenario content might contribute to decisions whether or not to reveal sensitive information to a third party. It may be that participants chose not to reveal the information in the first scenario deeming it too sensitive to be shared with anybody else. (*Imagine that you tell a friend that you are distressed because you have been unfaithful to your partner. You ask your friend not to tell anybody. Your friend later meets a group of*

*people **inside/outside** your close circle of friends and tells them your secret.*) It would be advisable in future studies to subsequently interview participants to ascertain whether or not certain types of information are considered to be more 'confidential' than others.

Some of the results demonstrated in this chapter are in direct contrast to those indicated by the children in the previous chapter. Young people were significantly more likely to trust a friend who had betrayed them to an authority figure (in this case a parent) than to a friend and they were also more likely to forgive a perpetrator who had betrayed them to an authority figure than to a friend. The comparison ought to be viewed with caution as the scenarios presented in the adult study were different from those presented in the adolescent study. Those in the adolescent study were about failing a class test and having a member of the opposite sex reveal their feelings of affection. For the first scenario in particular (failing a test), it is easy to see how young people would accept this kind of information being shared with a parent. If a child is upset to have failed a class test then they are likely to elicit support and guidance by sharing that information with a parent. Sharing information with a parent is also highly unlikely to affect their standing within their peer group, something that is paramount at this stage of development. It seems sensible to assume that unlike adolescents, adults are more likely to share sensitive information with a friend than an authority figure. The reasons for this are similar but inverse to those for adolescents in as much as adults are far less likely than adolescents to worry about maintaining status within their peer group and far more worried about maintaining status with their employer. This is particularly true in an age when revealing information via the internet has led to termination of employment, (Readwriteweb.com, 2009).

The results are consistent with Valkenburg & Peter's (2007) interpretation of the social compensation hypothesis that mediated communication and closeness to friends increases with age. The social compensation hypothesis maintains that reduced cues in computer mediated communication allow individuals to overcome any inhibitions they might experience in face to face interactions. By forgiving betrayals of sensitive personal information young adults are demonstrating that any inhibitions they had about sharing the information have been overcome. This serves then to increase closeness and maintain existing friendships. The major criticism of this conclusion is the fact that adults are far more likely to already have established friendships than adolescents although this does not negate the possibility that closeness is increased.

In terms of existing models of computer mediated communication, the findings here are concordant in that the results demonstrate clearly that disclosure through a third party to a friend is acceptable, supporting Walther's argument that adults are more likely to take an active role in disclosure of personal information. Furthermore such disclosure of personal information fosters intimacy as demanded by the social information processing model and the later hyperpersonal model of communication. The results confirm Walther's (1996) suggestion that the intimacy of some information leads to feelings of betrayal. In conclusion, the findings of the present study clearly demonstrate that adult patterns of disclosure are similar to those of children in that both cohorts are open to forgiving small scale betrayals of trust. What is equally apparent is the fact that although differences exist in their attitudes towards method of betrayal, adults are less sensitive to the social dynamic preferred by children. Adults are as likely to forgive betrayal committed via technology as face to face contradicting Boyd's (2003) theory that trust is more difficult in an environment of reduced social cues. The findings for this adult cohort also demonstrate

support for the framework presented in chapter 4, where results indicated the relevance of communication technologies to young users. Adults are just as likely to place considerable importance in communication, sharing information, trust and maintaining friendships as identified in the framework suggested in chapter 4. The findings in this chapter show that mediated communication and closeness to friends is a function of age. This supports existing models within HCI literature, for example the social compensation hypothesis which states that reduced cues in computer mediated communication allow users to overcome inhibitions experienced in face to face communication as demonstrated by adults' willingness to not only to share personal information but also to forgive betrayals of confidence should that information be shared with a third party.

The framework suggested in chapter 4 outlines issues deemed important to young technology users which pointed to their need to communicate and their ability to maintain existing relationships by sharing information with one another. These kinds of sharing behaviours are displayed by adults too and as sharing any kind of personal information is embedded in trust the current study sought to explore this further. The initial aim of the current study was to ascertain whether young adults would respond to betrayals of privacy and trust in the same way that the children had in the previous study. Some similarities were detected in their responses however their choice of acceptable recipient for a betrayed confidence was different. The themes presented within the current framework offer a basis for mediated communication to be investigated where anonymity is not present. Both sets of findings point to a failing within the existing models of computer mediated communication to explain behaviours where anonymity is absent. The next step is to explore whether alternative mediated platforms reveal similar shortcomings within existing explanations of computer mediated communication. The subsequent chapter will examine computer mediated

communication between young people from the perspective of a one-to- many

platform, that is, via social networking sites and in particular, weblogs

Chapter 7 Public patterns of disclosure: Adolescent Weblogs

This chapter extends the findings of the research carried out in the previous three chapters by examining weblogs - an increasingly popular communication platform. This was viewed as a natural progression from one-to-one communication as explored in previous chapters to a one-to-many platform. Young people manipulate this medium as well as updating the sites constantly and unlike weblogs of the past, these sites are no longer used solely as an online diary to post personal details but are in fact being used to present information and demand a reciprocal response from online friends and visitors alike using interrogative lists of questions. Previous findings demonstrate how trust and forgiveness are dependent upon recipient and medium and this study aims to see if this remains true for an alternative and progressively popular medium. The results reinforce the ease with which young people manipulate technology to suit their needs as well as demonstrating the speed of disclosure behaviours. Furthermore, results show the increasingly relaxed attitude towards disclosure and suggest that mutual disclosure can deepen trust leading to stronger peer relations. Finally, results outline how failure to respond to demands for information can lead to a reduction in strength or termination of an existing relationship as suggested by existing models of communication.

7.1 Introduction

It has already been described in previous chapters how relationships are grounded in communication which relies on disclosure to instigate and maintain those relationships, (Jourard, 1958; Knapp, 1984; Derlega, 1993; Weisband & Kiesler, 1996; Joinson, 2001). It is outlined in chapter 2 how self-disclosure is the act of revealing details about oneself to others in an effort to build up and develop a relationship. The findings from the previous studies in this thesis demonstrate how this is true for young adults and children alike within a variety of settings. The findings from the previous chapters supplement the existing literature. They indicate clearly that different patterns of disclosure are more readily acceptable than others. Young people are happy to maintain a trusting relationship and forgive small transgressions when a confidence is betrayed

even when that betrayal is to a parent or other significant adult. Furthermore, the thesis demonstrates that differing patterns of disclosure are more or less acceptable dependent upon the presence or absence of digital media. This latter finding is demonstrated by young peoples' decision to forgive a betrayal and maintain trust more readily when betrayed face to face rather than via an SMS text message. In contrast, adults indicate that betrayal to a friend is more likely to be forgiven reinforcing the self-disclosure view that sharing information is a vital part of developing trust within a relationship. The results offer further support for Walther's social information processing theory (1993) that correspondents must take an active role in impression formation through the sharing of information. From his hyper-personal perspective, (Walther, 1996) the results reinforce the notion that the reduced visual, aural and contextual cues lead to a more relaxed type of communication.

Some of the most interesting displays of disclosure can be viewed readily on the Internet due to the emergence of social networking sites such as MySpace[TM], LinkedIn[TM], Bebo[TM], Facebook[TM], and most recently Twitter[TM]. These sites offer researchers an abundant source of readily available published data. Prior to the emergence and rapid popularity of such networking sites, information was posted online via 'blogs'. "Blog" is an abbreviated version of 'weblog,' a term used to describe websites that maintain an ongoing chronicle of information. A blog is a frequently updated, personal website featuring diary-type commentary, usually offering links to related articles or other websites. Blogs range from the personal to the political, and can focus on one narrow subject or encompass a whole range of subjects. Blogs may focus on a particular topic such as web design, politics, sports, or mobile technology whilst others are more eclectic, presenting links to all manner of other sites, often commercial. Still more can be likened to personal journals, presenting the author's daily life and thoughts.

Generally speaking most blogs tend to have a main content area where articles are listed chronologically, with the newest on top. Often, the articles are categorised, there is generally an archive of older articles and usually a way for people to leave comments about the articles.

Weblog popularity has surged over the last few years, having risen from 6 million at the end of 2004 to approximately 73 million active blogs worldwide in March 2007 (caslon.com). Trackers estimate that 120,000 new blogs are created daily although these figures are somewhat misleading in that they document only the number of weblogs created, rather than those in current use. It is estimated that at least 60% of all weblogs created are abandoned within a month with few regularly, if ever updated. In reality it is impossible to quantify a reliable count of blogs that exist for two reasons: firstly, tracking figures estimate only those blogs hosted by websites failing to account for independently published blogs and secondly, there is no account for inactive or abandoned blogs. The numbers also fail to differentiate between genuine and spam blogs, i.e. fake weblogs containing links to sites affiliated with the blogger, set up to boost the search engine rankings and advertisement impressions for that site. Another problem is that many of the figures quoted are U.S. based, there is little U.K. based demographic research however in April 2006 a survey by the British Market Research Bureau indicated that 70% of respondents had heard of blogging but only 2% of Internet users had published a weblog with 10% reading a weblog once a month or more.

Many theories exist as to who blogs and why they bother. Recent studies show that teenagers write roughly half of all blogs today (Orlowski, 2003; Caslon, 2008). There is a widely held belief that the typical blog is the domain of the adolescent (Herring 2004) created by a teenage girl who uses it twice a month to update her friends on the happenings in her life (Orlowski 2003), whilst others

opine that blogging 'remains the dominion of geeks, wittier-than-thou twenty-to-thirty something's' (Phillips, 2003). A literature search revealed an Israeli study offering community demographics showing that of the 27,000 blogs sampled, 27% were authored by those under 15 years and 56% between the ages of 15 to 19 years. This offers a firm basis for extending the current literature to encompass the nature of blog content.

In recent years empirical research examining weblogs has tended to be relatively narrow exploring issues such as gender and age (Herring, 2004; Scheidt 2006), genre (Miller & Shepherd 2004) as well as the outcomes sought by users (Pedersen, et al. 2007), as well as subject, for example, religion (Rainie, 2005) and cyberbullying, (Campbell, 2005). It is also true that much work has been U.S. based with a dearth of research and very few statistics addressing the blogging habits of young people and very little exploration of this type of media within the U.K. This is a tremendous oversight when considering the fact that 92% of 9-19 year olds interviewed by Livingstone and Bober for the UK Children Go Online Study (2004) revealed that they had internet access at school and a further 75% have access at home. Despite these figures a survey in June 2007 suggested that only 10% of British 18 to 24-year-olds have ever blogged. There is little evidence available offering any clear exploration of weblog activity or content within the U.K. and the prevalence of such sites demands that attention be paid to this oversight.

Young people seem to be moving away from 'true' blogging sites in favour of alternative social media, i.e. social networking sites. Blogging is fast becoming yesterday's phenomenon to be squirreled away with such playthings as the yo-yo or the Rubik's cube, no longer fashionable. Of course for the young, keeping up with the latest fashion is an essential part of development, ensuring peer-

group inclusion as addressed in previous chapters. Social networking sites are the latest technologies and trends in online communication (Lipsman, 2007) attracting a large number of young users (Bausch & Han, 2006). The swift expansion of the social networking culture demands that research address this shift in behaviour. Initial analysis would suggest that far from abandoning blogging adolescents are merely adapting the medium to fit in with new platforms; young people are recording their daily activities but instead of creating blogs, they are adopting social networking sites as their medium of choice; pseudoblogs. The most recent craze to hit the computer mediated communication domain is that of Twitter, a free to subscribe social networking site that enables users to send and read messages known as 'tweets'. These messages are displayed on the author's homepage and sent to the author's subscribers who are known as 'followers'. The application is often described as the SMS of the web due to its limit of 140 characters per message leading to increasingly ingenious use of language and abbreviation. These mini-feeds are described as 'microblogs' – a mutation of the former unrestricted blogging sites although many of the established social networking sites have similar applications i.e. the facility for status updates. There are also applications that can send a status update to all of the social networks to which the author subscribes.

More recently there has been some attempt to investigate young people's use of these pseudo-weblogs or the content therein. Much of the data comes from non-empirical research and is very narrow, focussing on bullying or happy slapping events that are recorded (usually via mobile telephone) and subsequently posted on sites such as MySpace$_{TM}$ and YouTube$_{TM}$ or other sites that support video technology. More relevant to the current chapter is the work of Kumar, Novak, Raghavan & Tomkins (2004) who examined over one million bloggers

and individual entries of some 25,000 blogs revealing demographics, friendships, and activity patterns over time. Huffaker (2004) addresses gender differences in identity and language use in weblogs. Herring et al (2004) offer a quantitative analysis of blogs, focusing on author characteristics, reasons for blogging, frequency of posts and commenting, usage of blog features. Herring et al. (2005) point out the dearth of research investigating the uses of or content within blogs and go on to describe weblogs as a bridging genre. In 2004, Cohen, McDonald and Towle conducted empirical studies of photo-blogs, whilst Krishnamurthy (2002) analyzed blog posts regarding the events in New York on September 11th 2001. Halavais, (2002) addresses methodological issues in text analyses of blogs and finally, Gumbrecht, (2004), Nardi, et al. (2004) Schiano, et al. (2004) present three papers investigating relationship management with readers along with the reasons for blogging. The overall conclusion from this literature is that blogging does not offer a great deal of interactivity which seems to fly in the face of the common use of socially interactive technology. These are all legitimate areas for research however limited their focus. They demonstrate clearly numerous examples of research addressing surface issues and demographics rather than investigating the underlying concerns of the function of blogs as social media, disclosure patterns therein, and whether they are used in the development of friendships as well as how they are maintained.

Literature that does exist addressing 'blogs' from the perspective of content reveals that young people customise their web pages in such a way as to personalise them to express their personalities, assert their independence and influence friends and other visitors to their sites. Blom & Monk, (2003) have documented how a young person's personalisation of the PC and mobile telephone, has cognitive, social and emotional effects; current research reveals that young people are adopting the same behaviours in their online interaction.

Social networking sites adhere to Herring et al's (2005) notion of a bridging genre, allowing the blurring of boundaries between social media and afford a similar platform to blogging, allowing youngsters to document their interests and update their activities daily, often repeatedly throughout the day. Pfeil, Arjan & Zaphiris (2006) use content analysis to examine age differences between adolescent users (13 to 19 years) and older users (60 years plus) of social networking sites. They looked at differences in social activity and self presentation online and discovered differences in social capital as well as emotions between the two groups. Their research supports the well reported notion of the 'digital divide' between old and young (Prensky, 2001). They report that adolescents have larger networks of friends compared to older users, but young users are more likely to communicate with peers (+/-2 years) whilst older users have a wider age range in their network of friends. Their investigation of self-presentation is the closest offering from the literature to an investigation of the underlying reasons for varying levels of self-disclosure apparent in online communication. Hinduja & Patchin (2008) examine content from social networking from a quantitative perspective, revealing that young people were using sites in a responsible manner. Acquisti & Gross (2006) examined a fledgling Facebook$_{TM}$ focussing on privacy concerns of subscribers and their misconceptions about the visibility of their profiles. Privacy is also the focus of Dwyer, Hiltz & Passerini (2007) whose investigation reveals that social interaction is not a function of trust and privacy concerns. There is research investigating the motivations for blogging, (Nardi, Schiano & Gumbrecht, 2004) as well as literature proposing blogs be used as an obituary service (Hall, Bosevski & Larkin, 2006).

As previously described, computer-mediated-communication refers to the way in which humans use computers to communicate through both synchronous and

asynchronous methods to exchange information. Tidwell & Walther (2002) and Huffaker (2004) point out how computer-mediated-communication offers 'another lens for understanding human behaviour' and describe how social networks and the like are as popular as face-to-face communication exchanges. The avenues for communication that computer-mediated-communication provides for young people facilitates assembly of their online personae, expression of emotions, as well as the opportunity for them to design personal virtual environments. All of these activities can be construed as forms of interaction and exchange, (see Taylor & Harper, 2002) providing a framework for understanding the attitudes towards as well as the disclosure behaviours of adolescents.

There are several benefits of blogging, including learning the responsibility and discipline of keeping a journal; having a creative outlet; increased communication with friends and relatives; learning new Internet and computer technologies; and improved typing, spelling, writing and editing skills. However, as more young peers create blogs, there is a tendency to increasingly compete with each other for attention. Sometimes this can lead to children and adolescents to disclose personal information for example, posting inappropriate material, such as provocative pictures of themselves or their friends. At the time of writing, few studies have been conducted on social networking sites aimed at the disclosure of personal information facilitated by socially interactive technology. Kavanaugh, et al. (2005) offer findings from a longitudinal study which examined an online community and suggest that the internet strengthens feelings of attachment and social inclusion. Their efforts however do not address disclosure or issues of betrayal. Schneider & Hemmer (2005) examine instant messaging and explain how identity is a prerequisite for social interaction leading to an increase in self-disclosure. Whilst these findings support Walther's (1996) argument that individuals engage in 'over attribution' in an effort to

overcome the lack of cues in mediated communication, this is yet further research that fails to examine the nature of disclosure.

Demographic studies have shown that two out of three teenagers provide their age, three out of five reveal their location and contact information, and one in five reveals their full name (Samarati & Sweeney, 1998; Acquisti, 2004; Boyd, 2004; Strahilevitz 2004). Boyd describes this as young people making strategic representation of themselves to others. There are potential risks in sharing this type of detailed personal information, particularly when disclosure leads to offline meetings and in some instances, the young could be maintaining blogs without the knowledge of parents or guardians (Livingstone & Helsper, 2007). It is clear from media reports that the safety concerns surrounding use of the internet are at the forefront of investigation. No longer do campaigners and government restrict their safety worries to children using the Internet, there is currently concern for the safety of all young people communicating via weblogs and social networking sites. Gross and Acquisti (2005) report that such apparent openness in revealing personal information to vast networks of loosely defined acquaintances and complete strangers, calls for attention.

7.2 Rationale

The results in the preceding chapters reveal that the decision to forgive a betrayal of confidence and maintain trust in the individual who commits the act of betrayal is transient in nature dependent upon age and media. Younger individuals are reported as being the most flexible when betrayed to an adult. This is far less damaging than having their peers made aware of a secret and suggests that peer acceptance is as vital in the digital world as it is face to face. With the digital nature of relationships becoming increasingly common, the dynamic nature of disclosure is therefore liable to become increasingly dependent upon digital communication media. There are, however, differences

between the mediums of computer mediated communication, which may produce some natural linguistic devices or social interactions. For instance, online chatting is not consistent with the turn-taking sequences of face-to-face or telephone conversation, impacting language coherence (Greenfield & Subrahmanyam, 2003). The medium of instant messaging (IM), as another example, may actually foster intimacy among users, including self-disclosure and sentimental feelings, because it cultivates a social connectedness (Hu, Smith, Westbrook, & Wood, 2003). Because of these differences, and to investigate disclosure from the perspective of social networking sites, pseudoblogs, the following study seeks to address an alternative medium adopted by young people determined to communicate and stay in almost constant contact with friends and acquaintances alike.

It has already been illustrated that disclosure is related to privacy and trust and findings from the current thesis have demonstrated how trust can be described as a function of information sharing, manifesting itself in a variety of different ways. Together with mobile communication devices investigated in previous chapters there is precious little research examining the effect that sharing information via the Internet has on trust between individuals. There is research to investigate the success of weblogs, (Du & Wagner, 2006) and Samarati and Sweeney (1998) report findings related to disclosure and anonymity but this is from a commercial perspective with regard to remaining anonymous despite disclosing personal information. Acquisti, (2004) investigated risks faced by individuals disclosing personal information in an online setting but yet again this is from a commercial perspective and does not address the social or moral aspects of such disclosure.

Self disclosure through weblogs and their successors has recently begun to attract attention. Baker and Moore (2008) examine the use of blog sites to elicit social support and Mitchell Wolak & Finkelhor (2008) examine the likelihood of sexual exploitation of bloggers reporting that they were more likely than others to post personal details online, however they do not specify the identity of 'others'. An American study by Kolek & Saunders (2008) explores disclosure in an examination of undergraduate Facebook$_{TM}$ profiles but it is a demographic examination of college students and how many friends and photographs they have as well as the type of information they post with regard to drug and alcohol use. The most relevant study to date is that of de Souza & Dick, (2009) who examine disclosure by MySpace$_{TM}$ users, the results being related to the value of privacy.

To extend the exploration of the nature of trust relationships developed by young people using computer mediated communication) further investigation of the types and levels of disclosure of information via computer mediated communication might offer useful insight and facilitate a clearer understanding of disclosure behaviours performed by young people. Results from the study reported in Chapter 4 indicate that young users are fully aware of the safety issues and concerns of parents and carers surrounding their sharing of personal information. Results have shown that participants for the most part demonstrate socially and morally responsible behaviours in their attitudes towards mediated communication. Other than sharing, young people revealed a number of key themes relevant to their technology use and this formed a preliminary framework from which to examine their behaviour in a technology context. The thesis used the framework and investigated the nature of sharing behaviours practised by young people using technology to communicate. Findings in the study reported in Chapter 5 revealed that the dynamics of trust and betrayal differ as a function of modality. Results indicate clearly that different patterns of disclosure are more

readily acceptable than others and this was confirmed for older participants when the research was repeated on an adult sample as reported in the previous chapter. With this in mind, the current study aims to extend the research to take into account different communication platforms by examining young people's weblogs and further investigate disclosure behaviours.

Access to young people's pages is often restricted for safety and security purposes so the sites examined are those that offered open access. The fact that we were able to access any sites belonging to those under the age of sixteen years confirms findings that many young people will share personal details with unknown third parties via the Internet (Livingstone et al. 2005). Content analysis will be employed to scrutinize the types of disclosure young people are willing to share via their pages.

The current study aims to examine young people's weblogs and uses content analysis to address the types of information they are willing to share via their pages to see if this also fits within the suggested framework. In an effort to explore the disclosure behaviours of young people analysis of online postings from a selection of randomly sampled, publicly available English language weblogs will be conducted. It is predicted that this medium will also facilitate similar levels and elements of trust behaviours found in the preceding studies.

7.3 Method

7.3.1 Materials & Participants

This qualitative piece of research was carried out under the ethical guidelines set out by the British Psychological Society for internet mediated research, (BPS, 62/06, 2007). General ethical guidelines note that, unless consent has been sought, observation of public behaviour needs to take place only where people would 'reasonably expect to be observed by strangers' (*Code of Ethics*

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and Conduct, 2006: 13) As a result of security settings the weblogs viewed were those where profiles were not set as private and therefore were able to be viewed openly by the researcher.

Weblogs/postings were created and maintained by 40 adolescents between the ages of 12 and 17 years. There were 21 males, (Mean age = 15 years 6 months, std. deviation = 1 year 3 months) and 19 females, (Mean age = 15 years, std. deviation = 1 year 5 months); one female author chose not to reveal her age. The weblogs under scrutiny were hosted by a variety of providers and those chosen were deemed a comprehensive sample of those most popular sites available at the time of writing. Table 7.1.displays the service hosts and/or administrators of the weblogs viewed in the current study. Only the site hosted by the BBC was moderated i.e. monitored for unacceptable content.

Table 7.1: Service hosts and number of weblogs viewed.

Service host	N
Mykindaplace	10
Bebo,	20
BBC	2
MySpace	3
Blog.co.uk	5

7.3.2 Procedure

All weblogs were accessed in the first instance via an internet search engine over a six week period to ensure that the blogs were maintained and frequently updated. The weblogs were then subjected to content analysis using Atlas.ti qualitative data analysis package, the first page of each weblog was scored and categories created for the amount of personal information revealed such as name, age, location, avatar creation, pseudonym use, relationship status, and

contact details such as email addresses and instant messaging user names. Next, links were followed to additional pages and content analysis was performed on the data as in chapter 4. Initial analysis involved extracts being characterized for content through open coding. Conceptual content analysis was performed on the data in an effort to detect incidences as well as maintenance of trust within relationships, demonstrated through postings.

7.4 Results and Discussion

Because the weblogs were publicly available it is unlikely that the posts were aimed at specific readers, this was confirmed by one posting:

("starting a blog was a great thing for me, it allows me to vent whatever im feeling and no one cares lol.", x_Webbs_x, Female, 16 years).

The majority of the postings were directed at documenting daily activity in a diary-like fashion, removing the assumption that diaries are not meant to be read by anyone other than the author. As previously documented, many young users are either unaware of the ramifications of disclosing information over the internet (Livingstone, 2005, 2007; Byron, 2008), or choose to ignore safety guidelines as identified in the focus group study in chapter 4. A minority of the information disclosed in the current study would enable direct identification of the weblog author whilst the majority of the information disclosed could be used to convince the owner of the weblog of a third party's familiarity with them, their friends and their surroundings. This can be described under the preliminary framework introduced in chapter 4 as it demonstrates control and independence as well as sharing, all themes presented within positive aspects of technology usage. In terms of the existing models of communication, this publication of thoughts and feelings corresponds with the theoretical underpinnings of Walther's (1993) social information processing theory whereby users take an existing medium and adapt it to present and acquire social information. This is

clearly demonstrated by the young people whose blogs are presented in the current chapter as demonstrated in figure 7.1 below.

7.4.1 Demographic Information

Initial analysis reveals that contributors were happy to reveal a considerable amount of personal information, as indicated in Figure 7.1. The most readily disclosed details were age (97.5%) and full name (75%) closely followed by location (57.5%) and relationship status (57.5%). Least disclosed information was contact information in the form of an email address (7.5%) and alternative or less formal identification in the form of a pseudonym (30%). The findings displayed in Figure 7.1 contradict findings from previous authors. Compared to the existing literature, results here indicate much greater disclosure of personal information than previously reported by Samarati & Sweeney, (1998); Acquisti, (2004); Schneider & Hemmer, (2005); Hinduja & Patchin, (2008). The current study provides an updated set of statistics revealing nine times as many young people disclose their full name (75% here compared with 8.8% as previously reported by Hinduja & Patchin, 2008). The current study also demonstrates a 30% increase in the number of young people disclosing their age (97.5% compared to 67% as reported by Kumar et al 2004). OFCOM's (2008) report that 34% of the 16-24 year olds in their sample were willing to share personal details are challenged here although the age of sample participants differs and may be reflected in any findings. The levels of disclosure demonstrated so far correspond with the preliminary framework outlined in chapter 4 reinforcing the issues deemed vital to young technology users. For example, the items displayed in figure 7.1 are clear indications of the willingness to disclose personal details in an effort to communicate and share personal information with others as described under the theme positive aspects of technology use.
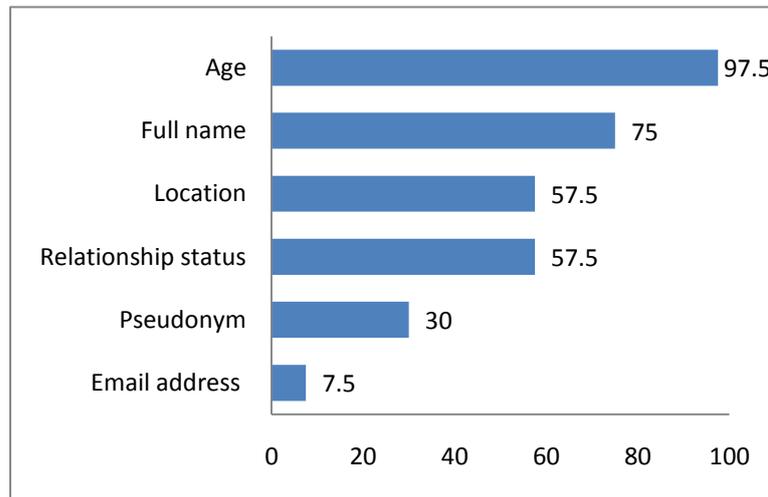
Figure 7.1: Percentage of personal details disclosed on first page of weblog.

7.5 General Analysis

Before any content analysis was carried out pages were scrutinised for individual appearance. Each of the pages was customised in terms of appearance dependent upon the weblog host each offering a different style. Each blog it was noted used informal language, heavily abbreviated, often written in lowercase with little punctuation and uppercase used only for emphasis or to indicate anger. Abbreviation of language can possibly be explained as a product of the restricted characters available when sending SMS text messages. Yet again these findings sit snugly within the existing models of computer mediated communication (Walther, 1993, 1996; Walther & Burgoon 2002). In particular this personalisation fits the social identification model of communication (Reicher, 1984) as young users strive to construct a socially categorised impression of themselves by adopting particular practices online.The demographic information confirms themes such as communication sharing and trust from the suggested framework. These findings can also be described under the theme of control in that the page author can control the appearance of the information as well as the nature and amount of information being revealed.

7.5.1 Content Analysis

In terms of each weblog's general content there were two main categories identified, *relationships* and *social politics.* It is clear that relationships might well be described under the heading social politics but as relationships were also sub-categorised it was deemed sensible to discuss these separately. The nature of the categories lends support to the themes friendship, sharing and communication within the preliminary framework identified in chapter four. Subscribers initially posted information such as current status which can range from commonplace such as:

(*"hockey_mad_fairy is out of bed!",* hockey_mad_fairy, Female, 15 years)

to more informative statements for example:

(*"Ex-boyfriend is back and my life officially sucks" Canary_101, Female, 17 years).*

The aim of each statement was to communicate current thoughts, feelings or whereabouts to the reader however it is clear that reader anonymity was possible as indicated by this author's ability to access the information. This type of posting adheres to the some of the features encompassed by the cues filtered out models of computer mediated communication. Often status updates like these were headings for more detailed postings confirming Boyd's (2004) position that disclosure of personal information is how young people choose to represent themselves to others, for example:

"Why is it that wen u break up with ur first serious boyfriend you just cant seem 2 get over him!!! SUCKS xxx Canary_101, Female, 17 years

Status updates such as these might be viewed as a virtual way of conveying identifying information. This was apparent in the content analysed for this study and can be found readily as a feature of most social networking sites where continuous status updates alert subscribers to a plethora of information about

the individual maintaining the page. Shenkler (1986) describes how self disclosure is a vital ingredient in adolescents' identity development so revealing this type of information in this way enables young people to construct an online version of their identity for others to see and comment upon. Furthermore the disclosures presented strengthen support for the framework presented in chapter 4 which outlines the importance of communication via sharing and social inclusion. Furthermore, these postings also demonstrate the level of honesty demonstrated by the author which is identified within positive aspects of technology use within the preliminary framework offered previously.

7.5.2 Relationships with Family and Friends

Relationships were divided into two separate groups, either family or friends and were referred to in almost every posting. Family relationships were characterised by comments about parents and siblings:

"ma mum was 28 wen she had me and ma dad was 30 i got a brother he is 2 yrs older then me but im not gna reil tlk much bout him coz dis is bout mee lol he is tye btw he might be mentioned in my blogs everynow and then"(Jayy-x, Female, 12 years)

The posting above demonstrates the level of disclosure deemed acceptable within this medium despite the freely accessible nature of the weblogs. Without follow–up interview it is difficult to determine whether the author is aware of the open nature of the weblog or whether the information is assumed to be available only to selected friends. Often family relationships were characterised as difficult or annoying which is not unusual during this developmental stage of adolescence. An example of this kind of posting shows mock frustration:

*(**"**Grrrr!!!! they are back ma bruvs m8s (tye < ma bruv) Neway his big m8s have just came in and took ova the house!!!! as usual dads triin 2 cook dinner set table and dey are ere tyes _got hw 2 do e,c,t god havnt they got lifes!!!! ffs!!! " Jay-xx, Female 12 years).*

Friendships were more complex in that they were referred to within postings about networks of friends, best friends, or romantic relationships. Friendship was referred to in a variety of ways, allowing social politics to be addressed for example,

("you know what really annoys me... when people you think are friends are actually two faced." punk_rock_chick, Female, 16 years).

This type of posting serves a number of purposes. It allows expression of feelings in an almost cathartic manner as well as being non-specific in terms of direction towards any particular subscriber. The preliminary framework would explan this kind of posting from a positive point of view in that the author feels able to express themselves honestly. Posting in this way enables sharing of information in a non-threatening way towards other subscribers supporting Suler's (2004) contention that people do and say more things via communication technologies than they would ever dare in a face-to-face setting. This type of disclosure is aimed at maintaining social relationships and invites support from fellow subscribers as suggested in chapter 2 (Derlega, 1993; Cornwell & Lundgren, 2001). This type of posting invites response from others and could also be directed towards the 'accused' friends as a way of communicating feelings in an environment deemed safe. This type of posting can be thought of within the negative aspects of technology use outlined in chapter 4, allowing a safe avenue for expression. Conversely however this type of posting also sits comfortably within the theme control as well as safety in that the author feels able to reveal this type of information without fear of retribution or criticism and, based on the focus group findings earlier, should the latter occur then the author has the ability to delete or block any unwanted response.

Friendships were also referred to with regard to maintenance of relationships through social interaction in an offline setting,

"Yesterday, Me, and my two mates Jody and Stacey went ice skating at the local ice arena, it was so much fun, and we went boy hunting on ice!"(xpiratexprincessx, Female, 16 years).

The latter type of posting adheres to the customary diary type blog comment, communicating status and popularity, as well as social activity and connectedness. The findings here relate to the themes presented under positive aspects of technology use previously outlined in the framework suggested in chapter 4 demonstrating the use of technology to maintain relationships with friends and family as well as organise and discuss social activities.

7.5.3 Social Politics

The remainder of content was grouped under the heading social politics. This is because the content within the sample revealed a variety of sub-categories including Conflict, Flirting, Worry, Advice, Abuse and Bullying. This assortment of topics all demonstrate a wide range of social issues faced by young people and their willingness to effect levels of disclosure online in order to express feelings and opinions as well as seek advice from peers about issues that may not be expressed in a real world face to face setting. Once again the categories described here mirror those described in the framework offered in chapter 4 offering support for using the framework as a basis for examining communication behaviours. This demonstrates the importance of addressing young users to elicit information about technology use rather than assuming a top-down 'mother knows best' approach. Moreover, it demonstrates the usefulness of the suggested framework as a basis for investigating how young people communicate sensitive issues and might offer a solution as to how

relevant agencies might communicate advice to young people in a non-threatening medium.

7.5.3.1 Conflict

The theme of conflict was apparent in a number contributions, for example, personal conflict as well as internal conflict and conflict within an external environment. The following posting was made by a male who used his opening page to vent strong feelings about a particular social class. He first makes clear his overall feelings with an introductory comment, and then goes on to itemise his reasons for that opinion:

("so y do i hate these people? well many reasons really, u all know i dont like

chavs." Domino_Flipsyde, Male, 17 year)

1. *the over obsession with burberry. once a coveted fashion material for those who were priveleged - now it graces our streets and towns!*

2. *do u have to drive your cars, blasting out tiesto or paul van dyke at full volume? jeez i mean any wonder u cant speak english if u cant hear what we r saying to you*

3. *the obsession with screen names starting with and ending with "2K7"*

*(*A comprehensive list of this author's reasons is available in Appendix 6).

This author's uses the platform to achieve a number of aims that can be related to communication needs, sharing and honesty as suggested by the framework. The author is able to express his feelings and is able to control the manner in which he does this but the question remaining is whether the author is fully aware of who is able to access this information. In relation to Walther's model, this type of posting supports the notion that reduced cues encourage greater levels of disclosure, (Walther, 1996). In addition to this if the author is aware of

the open nature of this posting it confirms the framework's contention that young people feel safe when communicating via technology.

Conflict was also demonstrated in other ways. Internal conflict was demonstrated by a female contributor who found the ability to post feelings in her blog helpful for her psychological well-being:

("She started poking me,THAT REALLY ANNOYED ME!!!! I have a bit of anger problems, Normally just with Mum and Dad," Neon_Nail_Varnish, Female, no age posted).

Another aspect of conflict was demonstrated by a female who used her posting to assert her knowledge of particular political beliefs and expressed her feelings about conflict from an external arena,

("There is community spirit behind sectarianism on both sides. We have 5 seasons; as well as Autumn, Spring, Summer and Winter, we have the riot season - also known as the marching season", the N_E_V, Female, 17 years).

7.5.3.2 Worry

Another topic falling under the heading *social politics* was worry. This was discussed in a variety of ways from worry appeared over general everyday issues such as education:

("I want to be a Photographer or a Journalist..I've been told i should go to Uni but i dont know if i will, dno if its for me, Any opion's??" Canary_101, Female 17 years).

It also manifested itself in worry for others:

(Found out this year 7 was getting bullied by someone we know, felt really bad for her, told a teacher...i know i know, don't call me a DOB, Female 14 years

and it was also demonstrated in worry about appearance to others:

("cos i had my cello lesson. Don't judge please. I'm not some geek." Male, 14 years)

Learning how to manage impressions is a critical social skill that is honed through experience. Despite the pseudo-anonymity of these weblogs, the postings above indicate that each individual is eager to avoid being judged in a negative light demonstrating that identity and appearance to others in an online setting is as critical as it is offline.

7.5.3.3 Advice

There were also postings asking for advice about a variety of topics such as schooling and bullying as demonstrated above, As well as asking for help and advice about issues such as boyfriends:

(And i Dont know How i Feel Abowt Paul. Do i Still Love him?? Or Do i Love Malakye More, I Just Dont Know My Own Feelings. x.ZoeBaby.x, Female 13 years)

there were instances of responses to those requests for help:

("don't pester him into saying If he still likes you. Try and act mature around him" That_girl_Zoe, Female, 15 years).

Finally there were requests for advice about serious issues such as domestic abuse:

(Does anybody like they're parents new partner??I want to like him cos he has had a hard life but he really scared me once. Wenz.X., Female, 16 years).

7.5.3.4 Flirting

Boyd (2007) points out the use of social networking sites as a means of flirting and the evidence here supports her findings. Flirting was demonstrated in many of the female weblogs with comments such as:

("like im gettin more attention from the boyss! Lol cos today was waiting in the bus stop and when the bus came this guy C grabbed me [as in y'know "Saved your life!!"] and so i gasped and he started laughing..." Neon_Nail_Varnish, Female, no age posted).

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("So then this guy was like to me will you go out with me please?!?
Errrmm nope sorry x Got off the bus and C kept pretending to save my life!
Jeez! Lmao
Actually i don't mind 'cos he is nice." Neon_Nail_Varnish, Female, no age
posted)

Conflict, worry, advice, and flirting are all topics which occurred freely within many of the blogs examined and fall within the framework presented in chapter 4 underneath both positive and negative aspects of technology use. The participants in chapter 4 discussed the ability to escape from conflict by blocking people thereby reducing feelings of worry but others described the feelings of safety offered by technology should they feel there is a contentious issue needing discussion with a friend. The ability to communicate other than face to face allowed for resolution to occur where it might not if the issue was discussed in a face to face setting, in fact it was more likely that the issue would not be resolved if a face to face meeting was required. Asking for advice was commonplace whether it was advice on homework or as presents in 7.5.3.3. Being able to ask for advice about issues as serious as domestic abuse confirms the evidence provided within the framework of the themes that young people deem relevant and important to them and shows the vital importance of technology as a trusted method of gaining help even if that help is no more than a response from another in the same situation.

7.6 Hyperpersonal communication

Comments related to flirting such as those presented in 7.5.3.4. above were limited to the female sample however flirting was also demonstrated in other more covert ways by both males and females. Both genders published lists which required respondents to give yes or no answers to a variety of probing questions. (see table 7.2 for an example list). This type of mass posting is fascinating and rather than supporting the hyperpersonal model of computer

mediated communication it almost makes the model seem naive. It is well documented that computer mediated communication allows users to overcome barriers such as shyness and self-consciousness, the reduced cues encouraging them to reveal more information and ask more intimate questions than they would in a traditional face to face setting, (Walther, 1996; Hian et al. 2004; Valkenburg & Peter, 2009). The lists presented here demonstrate clearly the four elements that define Walther's model. The young person posting the list already has an an idealized perception of the receiver and presenting the list with the contributor's responses already indicated offers an idealized self-image which is created and presented to others through self-selection. The very nature of the weblog presents an asynchronous channel of communication allowing respondents to self-edit with much more thought than would be afforded in a spontaneous face-to-face environment and the demand for reciprocal responses as well as reposting the list on the respondents own site creates the feedback loop is reinforcing idealized perceptions of both the person who posts the list as well as any other respondent. As described by Walther the rules presented by those posting these lists makes the interaction a reciprocal process and the nature of the questions posted demonstrates the intensity demanded by minimal-cue interaction. Communicating therefore via these lists (providing they are met with responses) has the potential to produce intense and often overly intimate relationships where similarities between the two individuals are highly magnified and the differences minimized. These lists were more commonly found on, but not restricted to, male sites. The posting and content of the lists indicate gender differences as consistent with Pedersen and Macafee (2007). They report that young males are less likely to post long pieces of text preferring instead to post lists to which visitors are expected to respond. This is often a reciprocal gesture, for example, the author posts the list of questions with his own responses asking for visitors to reply to the same questions. Furthermore

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the respondent is encouraged to reproduce the list on their own webpage. The aim of such lists is to elicit a large amount of information as efficiently as possible and refutes Orlowski's (2003) premise that blogging is the domain of the teenage girl. Table 7.2 (posted by a male, aged 15 years) and Table 7.3 (posted by a male, aged 17 years) on the following pages demonstrate the content of two such list. The response demanded for the list in Table 7.2 is just a yes or no answer, whilst the list in Table 7.3 offers a more complex set of responses Yes, (Y), No, (N), Maybe, (M) and Dunno, (D).

Table 7.2: Example question list #1 posted on weblogs
WOULD YOU...

1. give me your number?

2. kiss me?

3. let me kiss you?

4. watch a movie with me?

5. let me take you out to dinner?

6. let me drive you somewhere?

7. take a shower with me?

8. be my bf/gf?

9. have a fling with me?

10. let me buy you a drink?

11.take me home for the night?

12. Would you let me sleep in your bed?

13. Sing car karaoke with me?

14. re-post this for me to answer your questions?

15. give me a piggyback ride?

16. Come pick me up at 3 am because my car ran out of petrol?

17. have a relationship with me?

18. Dance with me?

19.Let me make you breakfast?(I can cook btw)

20.go out with me?

21. Help me with homework?

22.Tickle me to death? (then u will b dead)

23. Let me tickle you?

24. Stick up for me if i was being put down?

25.Play strip poker with me?

Table 7.3: *Example question list #2 posted on weblogs*

Y= yes

N = no

M= maybe

D= dunno

WOULD YOU?

[_] give me your number?

[_] let me kiss you?

[_] have a fling with me?

[_] Would you let me sleep in your bed?

[_] Get wasted with me?

[_] Hang out with me?

[_] Bring me around your friends?

D0 Y0U.

[_] think im cute?

[_] think im hot?

[_] want to kiss me?

[_] want to cuddle with me?

AM i...

[_] cute?

[_] funny?

[_] cool?

[_] adorable?

_] great to be with?

HAVE Y0U EVER

[_] thought about me?

[_] thought there might be an "us"?

[_] found yourself wanting a kiss from me?

[_] had a crush on me?

[_] wanted my number?

The reproduction of lists from one user to another was, as reported more common though not restricted to males. It is clearly a possibility that sharing of, response to and reproduction of such lists will serve to strengthen peer relations and establish relationship commitment as outlined by existing communication models yet overlooked within a young participant base. One possible explanation for this might extend the findings of Taylor & Harper (2002, 2003) who suggested that text messages can resemble gifts as they have symbolic meaning for the recipient and can demonstrate commitment to a relationship. As well as sharing lists to strengthen existing relationships, the items contained within the lists facilitate a new way to flirt and act as mediators in encouraging the development of new relationships. In relation to the preliminary framework these lists demonstrate a variety of themes that can be viewed separately or as a combined entity. It is clearly evident that the sole aim of the lists are to elucidate friendship through immediate and complete communication carried out in such a way as to exert control over the request for information in an effort to consolidate relationships by demanding complete honesty and sharing a tremendous amount of information.

As documented in earlier chapters, and supported by models of computer mediated communication, (Lea & Spears, 1992, 1995; Walther 1993, 1996; Walther & Burgoon 2002) young people are quick to adopt an existing medium and manipulate to suit their own needs. For example, with SMS text messaging they found a way to overcome the restrictions set by limited characters allowed in messages by manipulating language, creating clever abbreviations and adopting emoticons instead of text. This allows communication whilst taking advantage of the themes identified in the framework presented earlier such as sharing, friendship and control for example as well as gossip. The same type of manipulation is demonstrated in many of the weblogs sampled here, for

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example, the repeated posting of lists of questions by both males and females corresponds with those identified themes. First, contributors post a list of questions with a request for responses in a particular format. Next, there is a request (usually within the question list itself) to post the same list of questions on the respondents' own weblogs. The lists of questions are designed in such a way that they elicit the maximum amount of disclosure of personal information, as quickly as possible with a minimum of interaction within a very short space of time, supporting the hyperpersonal model of communication (Walther, 1996). In effect, they are the newest form of disclosure designed and adapted by the young for the young in an effort to create new maintain existing relationships and social networks. The publication of such lists offers the perfect ingredient in the cultivation and disclosure of self image combined with a clever information seeking tool.

The questions contained in these lists are constructed in such a way as to be described as a type of interrogation. They adhere to the existing models of computer-mediated-communication allowing correspondents to manage and adjust their behaviour according to the possible dynamics of the interaction. In particular this type of information-gathering fits Walther's (1996) hyper-personal model of computer-mediated-communication. Weblogs are the perfect setting for the hyper-personal model. Users are physically separated, self aware and experience commonality whilst simultaneously communicating within a limited-cues environment. This in turn facilitates selective presentation and construction as well as the ability to reciprocate representations of themselves. The reduced cues afforded by this type of interaction encourage the young to ask more intimate questions and to respond in such a way that they disclose more information far more readily than they might in a traditional face-to-face setting. The only problem with Walther's explanation for this behaviour is that these

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weblogs are typically anything but anonymous which the model accepted as customary in computer-mediated communication.

An important difference between social networking sites and earlier forms of many-to-many conversations such as chat rooms and blogs is that social networking sites are predominantly based on social relationships and connections with people, rather than a shared interest. Online communication has changed from being merely task-based or for sharing information and is increasingly an end in itself. (OFCOM, 2008). Granovetter (1973) was extremely progressive when he suggested that mediated communication was no longer exclusively dedicated to users already acquainted with each other. Like instant messaging, weblogs foster intimacy and self-disclosure and cultivate social connectedness (Hu 2003) and blogging seems to have taken place of best friend with investment in design rather than content particularly for girls. There seems to be a reciprocal exchange relationship based on disclosure of personal information.

Fuelled by parental concerns, many experts point to possible hazards of online communication, such as online bullying, sexual harassment, or Internet addiction (Lenhart, 2005; Livingstone & Bober, 2005). The content of individuals' blogs in the form of interrogative lists creates a paradox for those intent on protecting young people online. In one respect such content will go some way in allaying concerns in that there is no exchange of location , no requests for meetings, and the exchange of information is targeted at existing friendships and networks. On the other hand the content of such lists will increase concerns. Some of the questions such as, "Would you play strip poker with me?" "Would you let me sleep in your bed?" alert potential predators to the likelihood of behaviours sure to cause concern for parents. The fact that we were able to

access the pages hosting such lists offers avenues of concern for those concerned about the privacy issues of young people.

In the past it has been the case that anonymity and online persona within virtual environments allowed adolescents opportunities to construct their own identity (Calvert, 2002) and present themselves to others in a particular light. Self-presentation refers to adolescents' control of how they are perceived by others by selectively presenting aspects of themselves, (Leary, 1996). As discussed in chapter 2, disclosure online has been examined in the context of anonymity. Modern weblogs on social networking sites have changed this. The identities being created must conform to the standards demanded by the social network to which the adolescent has chosen to belong. These identities are almost as visible as those adopted in a face to face environment in part due to the fact that uploading and posting photographs is an integral part of online activity. There are sites where contributors choose not to add images and adopt a pseudonym but this does not reduce the levels of disclosure practised by young people.

As mentioned previously Suler (2004) contention that people demonstrate levels of disinhibition via communication technologies is supported in the current study. As documented in chapter 2, Suler reports six interacting factors that create this online disinhibition effect, some of which are demonstrated here; invisibility, the notion that reduced non verbal cues give rise to enhanced disclosure, asynchronicity, participants have time to formulate responses to the questions posted within lists and dissociative imagination, treating the interaction as a game.

Given that computer mediated communication via such weblogs confirms the presence of Zimbardo's (1969) suggested antecedents for de-individuation, namely, anonymity, altered time outlook, reduced sense of responsibility, novel

situation etc. (cited in Joinson 2003), the findings in the present study offer firm support for the social identification model of de-individuation. This model would explain the demand for reciprocal responses to such interrogation as defined by lists of questions allowing for socially categorised rather than personal impression formation. Within such an environment, the SIDE model proposes visual anonymity can be viewed as positive sometimes as well as personal (Lea & Spears, 1992; Spears, Postmes & Lea, 2002) The SIDE model suggests that conformity via computer-mediated-communication depends not only on visual anonymity but also the salience of a shared personal identity (Spears, Lea & Lee 1990). The results here indicate the demands for conformity whilst acknowledging the lack of cues afforded by computer-mediated-communication shifting the focus to the social identity framed within this medium supporting Hancock & Dunham's (2001) view of the SIDE model. Furthermore, the brevity and clarity of the questions adhere to the cognitive processes by which humans make inferences and attributions about others on the basis of minimal information as reported by Lea & Spears, 1992, 1995; Spears & Lea, 1992, 1994).

Clearly, research need now investigate issues other than demographics and ethnography to investigate how mediated communication is expanding its role beyond the direct and purposeful information exchange as documented by Nardi, Whittaker & Bradner, (2000).The disclosure reported in the current study unlike in the previous studies is not dependent upon recipient, i.e. who gets to see the posting or the responses to a list of questions. The current findings further expand the scope for research to investigate the dynamic nature of computer-mediated communication.

Chapter 8 Discussion and conclusions

8.1 Précis

The main aim of this thesis was to determine the issues deemed relevant by the young user and examine the impact of digital communications media on young people from a bottom-up rather than a top-down approach. The thesis strives to investigate whether interacting with technological devices and in particular, communicating via new digital platforms has any impact on the social and moral behaviour of young people. The central argument of this thesis is that within the HCI literature the role of the young user is often overlooked by the academic community. Empirical research is frequently performed based on directives from parents, educators, child protection agencies and government. Furthermore, there is a focus on developing safety strategies to protect young people from both psychological and more recently physical harm, as a result of communicating via digital media (Bird & Jorgenson, 2003; Livingstone, 2002; 2003; 2007). There is an abundance of research documenting the effects of computer-mediated communication however it is frequently concerned with developing models of communication which endeavour to account for the impact of reduced social presence and lack of visual cues in mediated communication, (Reicher, 1984; Walther 1993; 1996; Joinson, 2001).

Exploration of this argument has led to a number of aims and objectives which have been examined throughout the thesis. Chapter 1 describes the ubiquitous nature of technology positing the aims of the thesis and offering an appraisal of the contribution of technology to interpersonal communication (Prensky 2001; 2009). Chapter 1 offers a review of existing literature, presenting the context for the current thesis by revealing that much of the research surrounding children's technology use focuses on the risks attached therein, (Livingstone & Bober 2005) in turn neglecting entirely the positive effects that technology may have on

developing identity, as well as on social and moral aspects of development and behaviour (Morand & Ocker, 2003). The chapter outlines the absence of an adequate research base from which to assess the socio-developmental consequences of children's uses of technology.

The pervasive nature of technology has altered the landscape of childhood forever; on that basis, increases in, and adoption of, socially interactive technologies by the young emphasise the need for appropriate research examining issues pertinent to the young user. Chapter 2 focuses on the theoretical models of computer mediated communication alluded to in the opening chapter. Chapter 2 describes the psychological processes involved in interpersonal communication within face-to-face settings and how they are implicated in computer-mediated communication. The processes of self disclosure and disinhibition in a computer-mediated environment are described, before the chapter goes on to outline models offering an explanation of their contribution within computer-mediated-communication. Chapter two explains how models such as Reicher's (1984) social identification model of de-individuation, Walther's (1993) original social information processing theory and finally Walther's (1996) hyper-personal model of computer mediated communication attempt to account for the impact of reduced social presence and lack of visual cues in mediated communication. Each of the theories introduced in chapter 2 is thoroughly explored within the HCI context and all correspond with each other in that the main thrust of each is the attribution of stereotypes and rapidly adopted familiarity based on the premise of anonymity, particularly visual anonymity. Chapter 2 proceeds to explain the lack of contribution these models make to the explanation of behaviours displayed by young people communicating via social networking sites where anonymity is absent. Self-disclosure is revisited in this chapter explained as sharing

information with others that they would not normally know or discover; it is seen as an important part of developing a relationship in order to establish trust, (Derlega, 1993). It is this aspect of self disclosure that forms the basis of the research carried out in chapter 7.

Chapter 3 addresses children, communication and technology; towards whom the aims and objectives of this thesis are directed. The chapter reviews the literature exploring children and technology in general, (Prensky, 2001) children and the Internet, (Livingstone & Bober, 2005) moving on to child development, (Baumgarten, 2003) and bullying, (Byron, 2008) as well as literature examining children's use of mobile telephones and their contribution in terms of social capital, (Greenfield & Cocking, 1994; Ling, 2001; Siau & Shen, 2003). Finally, the chapter outlines the different methods of communication used by young people. Chapter 3 offers demographic information regarding children's access to digital technology and goes on to outline the experience of children born into a technology driven world. It is here that the thesis demonstrates how empirical research has thus far concentrated on quite a narrow focus such as, the impact of interactive technologies on children's health (both psychological and physical) as well as studies of how children interpret web environments, (Wartella, Lee & Caplovitz, 2002). Historically, this has been achieved by investigating the amount of time children spend using interactive media and the influence of violent content in video games on children's social behaviour. This chapter introduces how children's use of technology evolves; the impact of that technology on social development and patterns of communication, and argues that very few studies examine the social implications of communication technology for children and young people.

Chapter 3 presents the crucial nature of communication to child development and illustrates how children are coming of age in increasingly technological environments, (Cordes & Miller, 2000; Prensky, 2001). The chapter also describes the relationship between child development and technology in terms of psychosocial development, cognitive development, and socio-emotional development, (Baumgarten, 2003; Nucci, 2004; Turiel, 2008) outlining how a particular period of development, adolescence, relies on communication to achieve issues key to all young people such as peer acceptance and autonomy. The chapter goes on to introduce the different types of digital devices and platforms adopted by young people with which they communicate with one another. These include the Internet and mobile telephones. On this basis it is suggested that exploration of technological platforms such as computer-mediated-communication methods and mobile telephones are key areas of interest. This is reinforced by the statistics offered by Mobile Youth (2009) that young people spend eight times as much on their mobile telephones as they do on music for. The chapter goes on to address the importance of the mobile telephone in terms of social engagement and social practice and how the device has changed codes of behaviour and asks if the young user is aware of the social norms demanded by new media. Next it describes how platforms such as email, weblogs, instant messaging and text messaging have redefined social networks, enhancing communication, (Grintner & Eldridge, 2001; 2003; Ling, 2001; Valkenburg, & Peter, 2005). Finally chapter 3 outlines how the subsequent chapters will explore the importance of communication technologies to the young people adopting them.

Thus, examination of the aims and objectives begins in Chapter 4 which presents a qualitative study that canvasses the opinions of the young user towards technology. In so doing, it elicits their attitudes towards technology and

its applications and relevance to *them* rather than policy driven topics; those of the parents, educators and media as demanded by existing literature, (Wartella & Jennings, 2000; Shields & Behrman, 2000; Orleans & Laney 2000). Young people took part in focus groups and identified a wide range of topics that form the basis of group membership and are fundamental to the development and maintenance of communication between peers as displayed in Table 8.1.

Table 8.1: Framework of issues identified by young technology users originally presented in chapter 4

Usage Preferences	Positive aspects	Negative Aspects
Access	Communication	Bullying
Communication	Control	Deception
Games	Friendship	Exclusion
Independence	Honesty	Gossip
Ownership	Independence	Health
Rules	Moral	Lying
	Privacy	Moral
	Safety	Negative content
	Secrecy	Social
	Sharing	Tracking
	Social	
	Trust	

Findings illustrated a preliminary framework for understanding young people's social and moral behaviour through communication technology Categories displayed in table 8.1 demonstrate themes that were supported in chapter 4 with excerpts from the focus group study. Examination of those excerpts suggests that existing models of computer mediated communication do not account for the behaviours of young people in the same way as they do for an adult cohort. Whilst there are elements within existing models that predict some of the thesis findings, the framework offers a basis upon which to examine communication where the assumption of anonymity is removed.

When examined closely focus group excerpts indicated a broad split along social and moral themes and it is these qualitative findings which underpin the research in chapters 5 and 6. Building upon the key themes identified within the

framework and in an effort to examine further social and moral behaviours and whether those factors are taken into account when information is shared, the thesis strives to consider whether technology has an impact on trust by young people and how any betrayal of trust might impact on subsequent behaviour. Within a computer mediated environment, trust is defined as being fundamental to communication with individuals engaging in self-disclosure in order to establish trust, (Derlega, 1993; Barak & Gluck-Ofri, 2007). With the level of disclosure being facilitated by young technology users there was a natural progression from the behaviours being practised to examine what type of disclosures were acceptable and whether trust can be restored following betrayal of confidence. This in turn would examine the social and moral decision –making of the young user.

Chapters 5 and 6 continue the qualitative theme, offering scenarios upon which individuals were asked to respond to via questionnaire. The study in chapter 5 is carried out with children and adolescents and offers results that demanded further investigation with an adult cohort and therefore form the basis for the study presented in chapter 6. Findings from chapter 4 determine that young people have an inherent sense of morality when forming and maintaining social relationships with both family as well as friends. The main finding was that when faced with any kind of unexpected dilemma the primary response was to confide in a trusted other whether that was a parent or carer or in extreme circumstances, the police. Subsequent chapters confirm these conclusions demonstrating that trust is a vital part of maintaining peer relationships.

Examination of the thesis aims is continued in chapter 7 where an alternative medium is employed within which to investigate young people's patterns of disclosure. Thus, weblogs published on social networking pages via the Internet

are examined using a combination of content and thematic analysis. Results in this final study point to a more relaxed attitude towards disclosure as illustrated in the reciprocal nature of the disclosure of personal details. Self-disclosure can boost self-esteem if the other person accepts the disclosure and reciprocates and mutual disclosure deepens trust in relationships and helps both people understand each other more (Derlega, 1993). Findings suggest that in a computer-mediated setting, individuals are willing to disclose more information more quickly than they would do in a face-to-face setting, offering some insight into the disclosure behaviour of young people. These findings support the assumptions made within existing models of computer mediated communication with one notable exception i.e. anonymity, (Joinson, 2001; 2007; 2010; Jones, 1997; 1998; Kasesniemi & Rautiainen, 2002). The preliminary framework suggested in chapter 4 as a basis for investigating young people's communication behaviours takes into account the perceived lack of anonymity assumed by the current models.

This chapter will now consider how the findings summarised contribute to the aims and objectives and original contribution of this thesis.

8.2 Aims and objectives

As previously noted the fundamental aim of this thesis was to consider the social impact of digital communications media on children and young people to see whether or not interacting via new technological devices and platforms changed their subsequent behaviour. A number of specific objectives were set out in chapter 1 which addressed this aim and are considered in turn below in relation to how they have been met.

- Explore issues deemed relevant to young users of digital communication technologies and examine impact of digital communications media on young people.

To address the initial aim of the thesis, chapters 2, and 3 were dedicated to reviewing the current literature in an effort to design an interview schedule for the focus group study carried out in chapter 4. Employing a grounded theory approach, transcripts from chapter 4 were openly codes for categories allowing conceptual relationships to emerge from the data. This facilitated a clear understanding of the aspects of technology use that were of most relevance to young people themselves. Analysis of focus group data identified a preliminary framework with three broad themes as demonstrated in table 8.1. Participants indicated that they were fully aware of the safety concerns related to their use of technology. They discussed personal safety, physical and emotional safety from predators, and how to react to inappropriate contact in the correct manner. They discussed social safety, in terms of being able to withdraw from conversations and how to ensure the safety of young users from inappropriate content on internet-enabled phones. Finally they demonstrated awareness of appropriate behaviour ensuring safety of property. Despite this however they pointed out that whilst safety education was recognised, it was not always adhered to. Overall the thesis contributes to the idea that children and young people taking advantage of technology are fully cognisant with safety concerns and are fully aware of safety guidelines. These results ought to go some way in reassuring parents concerned for child safety in a technological environment. This chapter also identified the intrinsic morality demonstrated by young people. Despite the assumption of existing models that mediated communication leads to de-individuation and adoption of stereotypes in an effort to maintain group membership, chapter 4 reveals that these assumptions are not always true for

young users. The exploratory study in chapter 4 demonstrates that whilst establishing friendships and maintaining communication is important, this is not at all costs. Where they feel afraid for themselves or indeed others within their social circle young people demonstrate socially and morally responsible behaviours, sharing information when necessary.

- Understand the implications of technology for patterns of disclosure and whether there are differences in those patterns dependent upon age.

As reported previously, the categories identified in the focus group study in chapter 4 demonstrate a broad split along social and moral themes. Rather than producing depersonalised forms of communication which lead to inhibited interpersonal relationships, (Kiesler, et al. 1984; Hancock, & Dunham, 2001), evidence points to topics concerned with forming and maintaining social relationships as well as contributing to the development of prosocial and morally responsible behaviour. Furthermore, participants revealed that for the most part technology use was strongly related to maintaining contact with friends and family and this meant sharing which was referred to in a variety of ways. The majority of the narrative related to this topic refers to sharing information for example, participants discuss sharing secrets with friends, which is part of the process of development of friendship and trust as described in chapter 2 as being related to disclosure. Building on the literature reviewed in chapter 2, chapters 5, 6 and 7 were devoted to investigating different types and methods of disclosure.

With regard to the objective outlined above, chapters 5 and 6 both demonstrate that patterns of disclosure were a function of age. Both chapters employed

scenario based questionnaire studies to examine trust, betrayal of confidence and forgiveness of such betrayal. Chapter 5 employed a series of scenarios followed up with questionnaire items to measure patterns of disclosure. The results of the questionnaire study in chapter 5 revealed that disclosure was a function of medium. Rather than mediated communication, young people prefer a social dynamic when sharing sensitive information. Chapter 6 replicated the methodology of chapter 5 and employed a series of scenarios to measure adult patterns of disclosure revealing that adults are less sensitive to method of disclosure. The results demonstrate that like adolescents, adults also are willing to forgive small-scale betrayals of trust and privacy but adults do not require such a social dynamic to maintain friendship as young people. Findings confirm Walther's (1993) perspective that adults are more likely to take an active role in disclosure of personal information. Chapter 7 further examined young people's levels of disclosure revealing the extent to which young people are willing to disclose personal information in an effort to elicit a response from peers. This will be revisited subsequently in more detail.

- Examine the ways in which computer mediated communication can influence specific behaviours in relation to trust, and betrayal for children and young people.

Based on the fundamental nature of trust within mediated communication and the need for young people to establish trust with peers as part of the developmental process described in chapter 3, and the importance of trust as revealed in chapter 4 the thesis moved on to examine this futher. Trust and betrayal were investigated via questionnaire studies outlined in chapters 5 and 6. In both chapters participants illustrated their willingness to forgive small-scale betrayals of trust. Findings in chapter 5 revealed that young people's willingness

to forgive such betrayals of trust was dependent upon the manner in which the betrayal had occurred. They were more likely to forgive when the betrayal had occurred in a face to face setting, indicating that young people prefer a social dynamic when sharing sensitive information. This leads to the suggestion that the transferable nature of information forwarded via SMS might influence their decision to forgive. They were also more likely to forgive a betrayal to a parent rather than a friend reinforcing the importance of appearance and identity and maintaining status with peers. This result also reinforces the notion that ultimately young people are willing to behave in a morally responsible manner. The results here are encouraging and contrary to the negative reports about the effects of technology on youth. Findings demonstrate that the thesis contributes to existing literature (Barkhuus 2005) that mobile phone technology can lead to pro-social behaviours by being willing to forgive betrayal and share sensitive information with their parents.

- Examine whether the absence of interpersonal and social context cues inhibits communication between peers and friends.

Chapter 2 presents literature relevant to the objective outlined above; the consensus is that rather than being reduced, communication is enhanced by the absence of cues available in a face to face setting. As reported in chapter 2, Parks and Floyd (1996) found that participants reported disclosing significantly more in their internet relationships compared to their real life relationships and this was certainly the case in the current thesis. In computer-mediated communication the level of anonymity, distance and perceived safety, allow greater levels of disclosure to occur more quickly than might happen in a face-to-face setting. Examination of weblogs hosted by a variety of social networking sites in chapter 7 reveals that contrary to inhibiting communication between

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friends and peers, the absence of interpersonal and social context cues actually encourages more extreme methods of communication. Chapter 7 presents findings that indicate how dynamic young people become when faced with new media creating methods of eliciting large amounts of information simultaneously. This was achieved by generating lists of questions demanding disclosure of personal and often sensitive information. The level of reciprocation demanded from peers was equally extreme with the publication and demand not only for response to, but also replication of interrogative lists of questions. Overall the thesis contributes to the notion that young people are willing to disclose significant amounts of personal information in an effort to receive the same levels of disclosure from trusted others.

- Investigate whether computer-mediated communication alters the nature of communication by children and young people.

Chapter 3 illustrates that there can be no doubt that interactive media offers incredible opportunities for children. Livingstone, (2002) declares the internet a healthy medium for young people to communicate and maintain social networks and this must also be extended to mobile telephones now that most are equipped with internet capability. The framework offered in chapter 4 supports her findings demonstrating that communication is vital for young people. Technology has enhanced their ability to establish new relationships and maintain existing ones. Chapters 4 – 7 address this current objective; chapter 4 by outlining the range of topics addressed by young people during their interactions. As well as examining the nature of their interaction, chapters 5 and 6 demonstrate that there are indications of pro-social behaviours adopted by young people and that as they mature they are less likely to be influenced by the need to maintain status with peers. This offers support to Valkenburg & Peter's

(2007) interpretation of the social compensation hypothesis. The thesis demonstrates that young people use the reduced cues in computer-mediated communication to overcome any inhibitions they might experience in face to face interactions. This is supported by the findings in chapters 5 and 7. By forgiving betrayals of sensitive personal information young adults are demonstrating that any inhibitions they had about sharing the information have been overcome. This serves then to increase closeness and maintain existing friendships.

8.3 Overall contribution

In terms of an overall contribution to the literature the thesis has achieved this aim as demonstrated by the objectives set out above. A thorough review of the literature reveals that research addressing young people and technology is often policy driven (Byron, 2008; Livingstone & Bober 2005). This thesis has striven to examine these factors from a grounded theory approach using information provided by the participants themselves rather than from any pre-determined agenda. It is clear that there are features from the existing models of computer mediated communication that predict findings within the current thesis. For example, young people demonstrate a need to establish and maintain contact by becoming an accepted member of their peer group in line with Zimbardo's (1969) stated requirements for de-individuation that contribute so much to the social identification SIDE model of computer mediated communication, (Reicher, 1984). One of the initial findings that supported existing models of computer mediated communication was that young people communicating via SMS text message did not view visual anonymity as a negative factor. Visual anonymity in some cases enhanced communication and, as indicated within the framework suggested in chapter four, engendered a feeling of control and increased autonomy for the young user. The results in chapter four also support the findings of Spears, Lea & Lee (1990) that any shared sense of identity is based

on the salience of that identity. The problem with existing models however is that unlike the framework suggested in chapter 4 they do not take into account the age of the user. All themes were identified by all users sampled, however each theme was viewed in slightly differing ways by younger and older groups. This was notable in their descriptions of sharing which was referred to with regard to a number of factors such as devices, information, secrets, and gossip for example. This reinforces the notion of shared identity but not the differences therein. On this basis, sharing behaviours were further examined.

Chapters five and six took the key themes within the preliminary framework and examined their contribution to sharing information, betrayal of that information and the impact that betrayal might have on willingness to maintain a relationship. Thesis findings suggest that there is an inherent sense of morality demonstrated by young users that might advocate the positive contribution of technology rather than reinforce the negative. Results from chapter imply that disclosure can be seen as a function of age as well as medium and supports the argument that technology promotes pro-social behaviours. Rather than condemning young people to darkened bedrooms and damaging their social skills, findings reveal that young users prefer a social dynamic when sharing information and as argued previously, will behave in a positive manner, happy to confide in a trusted adult. This is in direct contrast to Livingstone's (2005) findings that young people are careful to hide information from their parents. Furthermore, none of the findings within the thesis can be viewed as offering support for the accepted premise of cues-filtered-out models of communication, that it is depersonalised and decreases awareness of others. (Culnan & Marcus, 1987). Participants also refute the assertion that mediated communication removes control from the sender. The findings in chapter six also reveal that adults are unaffected by medium when it comes to revealing sensitive information further confirming the

need for continued investigation of the relevance of extant models of communication for all age groups.

What the study in chapter seven reveals is how rather than constructing stereotyped and exaggerated representations of one another, young people are willing to offer exaggerated presentations of themselves. Unlike Lea and Spears' (1991, 1994, 1995), contention that this is based on minimal cues in an effort to elicit communication, these young people are maximising amounts of personal information in an effort to secure reciprocal behaviour. Dietz-Uhler, Bishop-Clark and Howard (2005) report that self-disclosure increases over time lending support to the social identification model, but rather than being compelled to adhere to social norms and exhibit reciprocity, what the current thesis has revealed is that young people are demanding the latter with immediacy.

Existing models of computer mediated communication state that when de-individuated participants perceive themselves as part of a group, then group identity intensifies and supersedes individual self-identities. The current thesis demonstrates that the level of de-individuation upon which these models are based is not occurring and in fact when communicating via computer mediated technology, young people are behaving in a converse manner. This result sits more comfortably within the social information processing theory of computer mediated communication (Walther, 1993; Walther & Burgoon, 2003) than the SIDE model but there is one notable exception. That exception being their contention that mediated exchange of information and communication is slowed; the current thesis argues that the opposite is true for young people. The findings offered by the current thesis can best be described within the confines of Walther's (1996) hyperpersonal model of computer-mediated communication. The findings in chapter seven in particular can be explained as unusually

intimate i.e. hyperpersonal. This is demonstrated in the level of intimacy both revealed and demanded from lists of statements posted on weblogs.

The thesis has demonstrated that existing models of computer-mediated communication can contribute towards an account for the behaviour demonstrated by young adolescents, but not in all instances, for example, where anonymity is absent. The thesis contributes to the idea that young people are aware of safety concerns and guidelines which ought to reassure those involved in child protection and offers reassurance that young people have an innate sense of morality and fairness. Findings indicate that the thesis contributes to existing literature by demonstrating that technology is encouraging pro-social behaviours in young people. It also demonstrates the willingness of young people to disclose significant amounts of information in an effort to have that disclosure reciprocated. From a theoretical perspective the thesis illustrates that non-anonymous online communication platforms such as weblogs stimulate self-disclosure. For many adolescents, the reduced nonverbal cues afforded them through this method of communication are beneficial, allowing more freedom in disclosing information about themselves as well as demanding information from others. In order to circumvent uncertainty, young people are interrogating one another by forcing them to answer intimate questions and engage in reciprocal self-disclosure of information. This provides a new outlook on the function of self-disclosure computer mediated environments.

8.4 Limitations and future research

The thesis had a number of limitations, such as ethical considerations and methodological considerations. Firstly, ethical considerations given to consent are an important issue which is a continuing source of investigation for the academic community for research carried out in Internet mediated environments. Whilst the thesis followed the guidelines for ethical practice in

psychological research online published by the British Psychological Society (BPS) and was also passed by the Northumbria University ethics committee, there was an issue with consent over the study in chapter 7. The nature of internet mediated research is such that it is not possible to verify the identity of research participants, as well as characteristics such as gender or age. The information presented in the weblogs sampled in chapter 7 was accepted as factual. Moreover, there is the issue of establishing the public nature of the weblogs. No contact was made with participants to establish the privacy of the content, despite it being publicly available via the web. The nature of research in a computer-mediated environment is such that all eventualities cannot be anticipated but every effort was made to adhere to the guidelines set out by the BPS.

From a methodological perspective there were some points to note. Firstly, the studies documented in chapters 5 and 6 employed scenario based questionnaires. Questionnaires offer problems such as socially desirable responses and care must be taken when interpreting the results from such studies. As noted earlier, participants were offering attitudes and thus we must conclude that more research on the communicative *behaviours* of young people would be valuable. Furthermore should the research be replicated, questionnaires must be subjected to pilot research prior to any comprehensive study. Reliability analysis of the questionnaire utilised in chapters 5 and 6 was less than satisfactory.

Finally, the thesis made an assumption based on the preliminary framework identified in chapter 4. This assumption that trust and betrayal were examined within a technology mediated environment offered some interesting results that support existing models of computer-mediated communication however there is

scope to revisit the framework identified in chapter 4. The framework was developed from the factors offered by young people as being most important to them when communicating via technology. They described their communication behaviours in three ways, how and why they preferred to use technological devices as well as the types of communication in which they were engaged. In order to determine whether or not this framework is exhaustive, further research might repeat the focus group study with a wider participant base and take into account age as well as gender differences. It might also be prudent to investigate whether a hierarchy of factors exists within the framework, something that might offer a useful basis for existing models to take into account in future research. It is apparent that further research investigating computer-mediated communication behaviours of young people might benefit from consideration of additional factors. Research might examine other types of pro-social behaviours, as well as the negative aspects of technology use identified within the framework presented in an effort to enhance the findings presented in this thesis. The research presented paints a different picture from that offered in an array of literature investigating the negative effects technology has upon the young. The findings here identify that young people born into a digital world display admirable pro-social qualities that ought to be recognised.

8.5 Final conclusions

This thesis has presented qualitative analysis of young people's use of digital communication devices in an effort to explore interactions between methods of computer-mediated communication and young people's subsequent social and moral behaviour. The research has been carried out to elicit the issues relevant to the young user of digital communication devices. Focus groups identified range of issues important to those young users rather than the issues deemed important by policy makers, parents and educators (Baumgarten 2003; Buchanan, 2007; Byron, 2008; Calvert & Jordan, 2001). Results indicate that

young people are aware of the safety issues concerning parents and academics eager to protect children and young people from online predators. Whilst the single most popular reason identified for engaging with technology was communication as identified by Boyd, (2004; 2007) , three key areas of concern related to technology use were identified in the current study; usage preferences, positive aspects of technology use and negative aspects of technology use. The topics relating to the latter two themes were split between social and moral behaviours forming a preliminary framework for understanding young technology users' communication behaviour within the HCI agenda. The contribution of the framework is in its identification of behaviours adopted by young people communicating via technology that have yet to be addressed within existing literature.

Subjective and objective methodology was implemented and examination and assessment of the concerns deemed important to the young user was achieved via questionnaire studies developed from the issues raised in the focus groups. Building upon the preliminary framework identified in that first study, the thesis focussed next on examining whether technology had an impact on trust by young people and how any betrayal of trust might impact on subsequent behaviour. The study revealed that for young people, dynamics of trust and forgiveness are functions of both type of medium chosen to convey information, as well as the recipient to whom the information is related. Further investigation confirmed that similar elements exist for older users (young adults) communicating via digital communication technologies. Subsequent investigation reveals that as young users of computer-mediated technology adopt each new alternative communication medium, they manipulate that new medium to fit their communication needs by using them in such a way as to enhance the speed and quality of communication. The overall findings identified

in this thesis corroborate the existing models of computer mediated

communication but extend the scope of investigation to include factors relevant

to the young user.

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Appendix contents

Appendix 1 Prompts for focus groups (ch4)

Below is a list of topics to be covered in each focus group.
The list will not be adhered to strictly in terms of order or wording. The aim is to let the children set their own agenda and only prompt when the focus seems to wander from topic.

I am interested in your opinions and attitudes towards the technology you use, there are no right or wrong answers and I would like to hear everyone's opinion. I will only interrupt to make sure that everybody gets a chance to speak.

- **Does everyone own/have use of a PC/mobile phone?**
- Is the type/make of phone you have important? Is it cool to own a mobile phone?
- What happens if someone does not have the same type of phone? Exclusion? Bullying?
- **Do you use them to send emails/text messages/instant messaging services (eg MSN)**
- Why?
- **Do you prefer to make a phone call or send a text message/email?**
- Can you give a reason for this choice? Cost? Speed? Privacy?
- **What do you use email/ text messaging for?**
- Homework help? Socialising? What about negative content, eg lies, bullying?
- **What kind of messages do you send?**
- General chat? Organising meetings with friends? Give me some examples. Is it easier to socialise using email/text?
- **Do you find it easier to send email or text some types of information?**
- When you cancel an arrangement? If the topic is embarrassing? If you are cross with someone?
- **How can you tell how the person you are messaging or who has messaged you is feeling?**
- Smileys? Have you ever been unsure or sent a message that was misinterpreted? How can you tell if the person who sent the message is being truthful?
- **Do you ever lie when messaging?**
- Why? When?
- **Can you be antisocial using text/mail?**
- Why? When?
- Have you ever sent/received gossip via email/text?

- How did it make you feel? Scared? Angry? Excited?
- **Are there any rules or regulations about what you should or should not send via text/email?**
- People? Times? Locations?
- **What about privacy, is that important to you?**
- Who do you share your messages with? Parents? Friends?
- **Tracking:** Do you know what it is? How does it make you feel?
- **Happy Slapping:** do you know what it is? Have you ever taken part? Have you ever received something like this? What would you do if you did? Why? How would it make you feel?
- **What are your views on safety?**
- Have you ever arranged to meet anyone in person after initially getting to know them via the internet? How about through Facebook or Bebo? Do you post pictures of yourself? Have you ever given personal details to a stranger online?

Appendix 2 Adolescent questionnaire - face to face version (Ch5)

Sharing Sensitive Information Questionnaire

The purpose of this questionnaire is to investigate your decisions about whether or not to pass on sensitive information. The questionnaire contains 6 brief scenarios followed by some questions and should take no longer than 20 minutes to complete. All your answers are confidential and anonymous.

There is an opportunity for you to provide contact details at the end of the questionnaire if you would like to receive a summary of the overall findings when the study is complete. Your contact details will not be used for any other purpose nor shared with any third party.

SECTION 1: YOUR DETAILS

1. Male___   Female___

2. Age___

3. Do you own a mobile phone? Yes___ No___

4. Do you use an Instant Messaging Service? **Yes___   No___**

5. Do you use blogs? (an online diary, log of personal thoughts published on a web page; Weblog) **Yes___   No___**

6. How many phone calls do you make per day? _____

7. When do you use your mobile phone most frequently? (please circle)

   During school hours   **Out of school hours**

8. How many SMS text messages do you send per day? (please circle)

0-10	11-20	21-30	30+

SECTION 2: YOUR OPINIONS

Over the page there are 6 scenarios and questions based on each scenario. Please read each scenario and answer the questions that follow.

Scenario A

Imagine that you meet your friend and tell them that you are feeling miserable because you have failed an important class test. You ask your friend not to tell anybody. Your friend later meets *your parents* and tells *them* why you are so down.

Now please answer the following questions. **Please circle your answer:**

1. I feel it is acceptable for my friend to pass on the information

Totally disagree   **1**   **2** **3**   **4**   **5**   **6**   **7**   **Totally agree**

2. I feel betrayed by my friend

Totally disagree   **1**   **2** **3**   **4**   **5**   **6**   **7**   **Totally agree**

3. I feel I can trust my friend

Totally disagree   **1**   **2** **3**   **4**   **5**   **6**   **7**   **Totally agree**

4. I feel I can rely on my friend

Totally disagree   **1**   **2** **3**   **4**   **5**   **6**   **7**   **Totally agree**

5. I will fall out with my friend

Totally disagree   **1**   **2** **3**   **4**   **5**   **6**   **7**   **Totally agree**

6. I will forgive my friend

Totally disagree   **1**   **2** **3**   **4**   **5**   **6**   **7**   **Totally agree**

7. I will continue to tell my friend secrets

Totally disagree   **1**   **2** **3**   **4**   **5**   **6**   **7**   **Totally agree**

8. I will try to get my own back on my friend

Totally disagree   **1**   **2** **3**   **4**   **5**   **6**   **7**   **Totally agree**

Scenario B

Imagine that you meet your friend telling them that you are feeling miserable because you have failed an important class test. You ask your friend not to tell anybody. Your friend later meets up with the rest of *your circle of friends* and tells them why you are miserable.

Now please answer the following questions. **Please circle your answer:**

1. I feel it is acceptable for my friend to pass on the information

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

2. I feel betrayed by my friend

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

3. I feel I can trust my friend

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

4. I feel I can rely on my friend

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

5. I will fall out with my friend

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

6. I will forgive my friend

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

7. I will continue to tell my friend secrets

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

8. I will try to get my own back on my friend

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

Scenario C
Imagine that during morning break a boy/girl in your school tells you that they like you very much. You meet with your best friend telling them about it and ask them to keep it a secret. Later that day *your parents* visit your friend's house and your friend tells *them* about your conversation.

Now please answer the following questions. **Please circle your answer:**

1. I feel it is acceptable for my friend to pass on the information

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

2. I feel betrayed by my friend

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

3. I feel I can trust my friend

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

4. I feel I can rely on my friend

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

5. I will fall out with my friend

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

6. I will forgive my friend

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

7. I will continue to tell my friend secrets

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

8. I will try to get my own back on my friend

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

Scenario D
Imagine that during morning break a boy/girl in your school tells you that they like you very much. You meet with your best friend telling them about it and ask them to keep it a secret. Later that day your friend meets with the rest of *your circle of friends* and tells them about your conversation.

Now please answer the following questions. **Please circle your answer:**

1. I feel it is acceptable for my friend to pass on the information

Totally disagree   **1**   **2**   **3**   **4**   **5**   **6**   **7**   **Totally agree**

2. I feel betrayed by my friend

Totally disagree   **1**   **2**   **3**   **4**   **5**   **6**   **7**   **Totally agree**

3. I feel I can trust my friend

Totally disagree   **1**   **2**   **3**   **4**   **5**   **6**   **7**   **Totally agree**

4. I feel I can rely on my friend

Totally disagree   **1**   **2**   **3**   **4**   **5**   **6**   **7**   **Totally agree**

5. I will fall out with my friend

Totally disagree   **1**   **2**   **3**   **4**   **5**   **6**   **7**   **Totally agree**

6. I will forgive my friend

Totally disagree   **1**   **2**   **3**   **4**   **5**   **6**   **7**   **Totally agree**

7. I will continue to tell my friend secrets

Totally disagree   **1**   **2**   **3**   **4**   **5**   **6**   **7**   **Totally agree**

8. I will try to get my own back on my friend

Totally disagree   **1**   **2**   **3**   **4**   **5**   **6**   **7**   **Totally agree**

Appendix 3 - Adolescent questionnaire - SMS version (Ch5)

Sharing Sensitive Information Questionnaire

The purpose of this questionnaire is to investigate your decisions about whether or not to pass on sensitive information. The questionnaire contains 6 brief scenarios followed by some questions and should take no longer than 20 minutes to complete. All your answers are confidential and anonymous.

There is an opportunity for you to provide contact details at the end of the questionnaire if you would like to receive a summary of the overall findings when the study is complete. Your contact details will not be used for any other purpose nor shared with any third party.

SECTION 1: YOUR DETAILS

9. Male___ Female___

10. Age___

11. Do you own a mobile phone? **Yes___ No___**

12. Do you use an Instant Messaging Service? **Yes___ No___**

13. Do you use blogs? (an online diary, log of personal thoughts published on a web page; Weblog) **Yes___ No___**

14. How many phone calls do you make per day? _____

15. When do you use your mobile phone most frequently? (please circle)

During school hours   **Out of school hours**

16. How many SMS text messages do you send per day? (please circle)

0-10	11-20	21-30	30+

SECTION 2: YOUR OPINIONS

Over the page there are 6 scenarios and questions based on each scenario. Please read each scenario and answer the questions that follow.

Scenario A
Imagine that you send a text message to your friend telling them that you are feeling miserable because you have failed an important class test. You ask your friend not to tell anybody. Your friend later forwards your message to your parents.

Now please answer the following questions. **Please circle your answer:**

1. I feel it is acceptable for my friend to pass on the information

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

2. I feel betrayed by my friend

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

3. I feel I can trust my friend

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

4. I feel I can rely on my friend

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

5. I will fall out with my friend

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

6. I will forgive my friend

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

7. I will continue to tell my friend secrets

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

8. I will try to get my own back on my friend

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

Scenario B
Imagine that you send a text message to your friend telling them that you are feeling miserable because you have failed an important class test. You ask your friend not to tell anybody. Your friend later forwards your message to the rest of *your circle of friends.*

Now please answer the following questions. **Please circle your answer:**

1. I feel it is acceptable for my friend to pass on the information

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

2. I feel betrayed by my friend

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

3. I feel I can trust my friend

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

4. I feel I can rely on my friend

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

5. I will fall out with my friend

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

6. I will forgive my friend

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

7. I will continue to tell my friend secrets

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

8. I will try to get my own back on my friend

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

Scenario C
Imagine that during morning break a boy/girl in your school tells you that they like you very much. You send a text message to your friend telling them about it and ask them to keep it a secret. Later that day your friend forwards your message to your parents.

Now please answer the following questions. **Please circle your answer:**

1. I feel it is acceptable for my friend to pass on the information

Totally disagree   **1**   **2** **3**   **4**   **5**   **6**   **7**   **Totally agree**

2. I feel betrayed by my friend

Totally disagree   **1**   **2** **3**   **4**   **5**   **6**   **7**   **Totally agree**

3. I feel I can trust my friend

Totally disagree   **1**   **2** **3**   **4**   **5**   **6**   **7**   **Totally agree**

4. I feel I can rely on my friend

Totally disagree   **1**   **2** **3**   **4**   **5**   **6**   **7**   **Totally agree**

5. I will fall out with my friend

Totally disagree   **1**   **2** **3**   **4**   **5**   **6**   **7**   **Totally agree**

6. I will forgive my friend

Totally disagree   **1**   **2** **3**   **4**   **5**   **6**   **7**   **Totally agree**

7. I will continue to tell my friend secrets

Totally disagree   **1**   **2** **3**   **4**   **5**   **6**   **7**   **Totally agree**

8. I will try to get my own back on my friend

Totally disagree   **1**   **2** **3**   **4**   **5**   **6**   **7**   **Totally agree**

Scenario D
Imagine that during morning break a boy/girl in your school tells you that they like you very much. You send a text message to your friend telling them about it and ask them to keep it a secret. Later that day your friend forwards your message to the rest of *your circle of friends*.

Now please answer the following questions. **Please circle your answer:**

1. I feel it is acceptable for my friend to pass on the information

Totally disagree   **1**   **2** **3**   **4**   **5**   **6**   **7**   **Totally agree**

2. I feel betrayed by my friend

Totally disagree   **1**   **2** **3**   **4**   **5**   **6**   **7**   **Totally agree**

3. I feel I can trust my friend

Totally disagree   **1**   **2** **3**   **4**   **5**   **6**   **7**   **Totally agree**

4. I feel I can rely on my friend

Totally disagree   **1**   **2** **3**   **4**   **5**   **6**   **7**   **Totally agree**

5. I will fall out with my friend

Totally disagree   **1**   **2** **3**   **4**   **5**   **6**   **7**   **Totally agree**

6. I will forgive my friend

Totally disagree   **1**   **2** **3**   **4**   **5**   **6**   **7**   **Totally agree**

7. I will continue to tell my friend secrets

Totally disagree   **1**   **2** **3**   **4**   **5**   **6**   **7**   **Totally agree**

8. I will try to get my own back on my friend

Totally disagree   **1**   **2** **3**   **4**   **5**   **6**   **7**   **Totally agree**

Appendix 4 - Adult questionnaire - face to face version (Ch6)

Sharing Sensitive Information Questionnaire

The purpose of this questionnaire is to investigate your decisions about whether or not to pass on sensitive information. The questionnaire contains 6 brief scenarios followed by some questions and should take no longer than 20 minutes to complete. All your answers are confidential and anonymous.

There is an opportunity for you to provide contact details at the end of the questionnaire if you would like to receive a summary of the overall findings when the study is complete. Your contact details will not be used for any other purpose nor shared with any third party.

SECTION 1: YOUR DETAILS

1. Male___ Female___

2. Age___

3. Do you own a mobile phone? Yes___ No___

4. Do you use an Instant Messaging Service? **Yes___ No___**

5. Do you use blogs? (an online diary, log of personal thoughts published on a web page; Weblog) **Yes___ No___**

6. How many phone calls do you make per day? _____

7. What subscription package do you use? (please circle)

   Contract   **Pay-As-You-Go**

8. How many SMS text messages do you send per day? (please circle)

0-10	11-20	21-30	30+

SECTION 2: YOUR OPINIONS

**Over the page there are 6 scenarios and questions based on each scenario.
Please read each scenario and answer the questions that follow.**

Scenario A
Imagine that you tell a friend that you are distressed because you have been unfaithful to your partner. You ask your friend not to tell anybody. Your friend later meets a group of people **outside** your close circle of friends and tells them your secret.

Now please answer the following questions. **Please circle your answer:**

1. I feel it is acceptable for my friend to pass on the information

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

2. I feel betrayed by my friend

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

3. I feel I can trust my friend

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

4. I feel I can rely on my friend

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

5. I will fall out with my friend

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

6. I will forgive my friend

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

7. I will continue to tell my friend secrets

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

8. I will try to get my own back on my friend

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

Scenario B
Imagine that you tell a friend that you are distressed because you have been unfaithful to your partner. You ask your friend not to tell anybody. Your friend later meets with your close circle of friends and tells them your secret.

Now please answer the following questions. **Please circle your answer:**

1. I feel it is acceptable for my friend to pass on the information

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

2. I feel betrayed by my friend

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

3. I feel I can trust my friend

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

4. I feel I can rely on my friend

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

5. I will fall out with my friend

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

6. I will forgive my friend

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

7. I will continue to tell my friend secrets

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

8. I will try to get my own back on my friend

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

Scenario C
Imagine that you meet with your work colleague telling them about an embarrassing medical problem asking them to keep it secret. Your friend later meets your employer and tells them about your conversation.

Now please answer the following questions. **Please circle your answer:**

1. I feel it is acceptable for my friend to pass on the information

Totally disagree   **1**   **2** **3**   **4**   **5**   **6**   **7**   **Totally agree**

2. I feel betrayed by my friend

Totally disagree   **1**   **2** **3**   **4**   **5**   **6**   **7**   **Totally agree**

3. I feel I can trust my friend

Totally disagree   **1**   **2** **3**   **4**   **5**   **6**   **7**   **Totally agree**

4. I feel I can rely on my friend

Totally disagree   **1**   **2** **3**   **4**   **5**   **6**   **7**   **Totally agree**

5. I will fall out with my friend

Totally disagree   **1**   **2** **3**   **4**   **5**   **6**   **7**   **Totally agree**

6. I will forgive my friend

Totally disagree   **1**   **2** **3**   **4**   **5**   **6**   **7**   **Totally agree**

7. I will continue to tell my friend secrets

Totally disagree   **1**   **2** **3**   **4**   **5**   **6**   **7**   **Totally agree**

8. I will try to get my own back on my friend

Totally disagree   **1**   **2** **3**   **4**   **5**   **6**   **7**   **Totally agree**

Scenario D
Imagine that you meet with your work colleague telling them about an embarrassing medical problem asking them to keep it secret. Your friend later meets with a mutual friend and tells them about your conversation.

Now please answer the following questions. **Please circle your answer:**

1. I feel it is acceptable for my friend to pass on the information

| Totally disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Totally agree |

2. I feel betrayed by my friend

| Totally disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Totally agree |

3. I feel I can trust my friend

| Totally disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Totally agree |

4. I feel I can rely on my friend

| Totally disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Totally agree |

5. I will fall out with my friend

| Totally disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Totally agree |

6. I will forgive my friend

| Totally disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Totally agree |

7. I will continue to tell my friend secrets

| Totally disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Totally agree |

8. I will try to get my own back on my friend

| Totally disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Totally agree |

Appendix 5 - Adult questionnaire - SMS version (Ch6)

Sharing Sensitive Information Questionnaire

The purpose of this questionnaire is to investigate your decisions about whether or not to pass on sensitive information. The questionnaire contains 6 brief scenarios followed by some questions and should take no longer than 20 minutes to complete. All your answers are confidential and anonymous.

There is an opportunity for you to provide contact details at the end of the questionnaire if you would like to receive a summary of the overall findings when the study is complete. Your contact details will not be used for any other purpose nor shared with any third party.

SECTION 1: YOUR DETAILS

1. Male___ Female___

2. Age___

3. Do you own a mobile phone? **Yes___ No___**

4. Do you use an Instant Messaging Service? **Yes___ No___**

5. Do you use blogs? (an online diary, log of personal thoughts published on a web page; Weblog) **Yes___ No___**

6. How many phone calls do you make per day? _____

7. What subscription package do you use? (please circle)

   Contract   **Pay-As-You-Go**

8. How many SMS text messages do you send per day? (please circle)

| 0-10 | 11-20 | 21-30 | 30+ |

SECTION 2: YOUR OPINIONS

**Over the page there are 6 scenarios and questions based on each scenario.
Please read each scenario and answer the questions that follow.**

Scenario A

Imagine that you send a text message to a friend that telling them that you are distressed because you have been unfaithful to your partner. You ask your friend not to tell anybody. Your friend later forwards your message to a group of people **outside** your close circle of friends.

Now please answer the following questions. **Please circle your answer:**

1. I feel it is acceptable for my friend to pass on the information

Totally disagree   **1**   **2**   **3**   **4**   **5**   **6**   **7**   **Totally agree**

2. I feel betrayed by my friend

Totally disagree   **1**   **2**   **3**   **4**   **5**   **6**   **7**   **Totally agree**

3. I feel I can trust my friend

Totally disagree   **1**   **2**   **3**   **4**   **5**   **6**   **7**   **Totally agree**

4. I feel I can rely on my friend

Totally disagree   **1**   **2**   **3**   **4**   **5**   **6**   **7**   **Totally agree**

5. I will fall out with my friend

Totally disagree   **1**   **2**   **3**   **4**   **5**   **6**   **7**   **Totally agree**

6. I will forgive my friend

Totally disagree   **1**   **2**   **3**   **4**   **5**   **6**   **7**   **Totally agree**

7. I will continue to tell my friend secrets

Totally disagree   **1**   **2**   **3**   **4**   **5**   **6**   **7**   **Totally agree**

8. I will try to get my own back on my friend

Totally disagree   **1**   **2**   **3**   **4**   **5**   **6**   **7**   **Totally agree**

Scenario B

Imagine that you send a text message to a friend telling them that you are distressed because you have been unfaithful to your partner. You ask your friend not to tell anybody. Your friend later forwards your message to your close circle of friends.

Now please answer the following questions. **Please circle your answer:**

1. I feel it is acceptable for my friend to pass on the information

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

2. I feel betrayed by my friend

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

3. I feel I can trust my friend

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

4. I feel I can rely on my friend

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

5. I will fall out with my friend

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

6. I will forgive my friend

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

7. I will continue to tell my friend secrets

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

8. I will try to get my own back on my friend

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

Scenario C
Imagine that you send a text message to a work colleague telling them about an embarrassing medical problem asking them to keep it secret. Your friend later forwards your message to your employer.

Now please answer the following questions. **Please circle your answer:**

1. I feel it is acceptable for my friend to pass on the information

Totally disagree   **1**   **2**   **3**   **4**   **5**   **6**   **7**   **Totally agree**

2. I feel betrayed by my friend

Totally disagree   **1**   **2**   **3**   **4**   **5**   **6**   **7**   **Totally agree**

3. I feel I can trust my friend

Totally disagree   **1**   **2**   **3**   **4**   **5**   **6**   **7**   **Totally agree**

4. I feel I can rely on my friend

Totally disagree   **1**   **2**   **3**   **4**   **5**   **6**   **7**   **Totally agree**

5. I will fall out with my friend

Totally disagree   **1**   **2**   **3**   **4**   **5**   **6**   **7**   **Totally agree**

6. I will forgive my friend

Totally disagree   **1**   **2**   **3**   **4**   **5**   **6**   **7**   **Totally agree**

7. I will continue to tell my friend secrets

Totally disagree   **1**   **2**   **3**   **4**   **5**   **6**   **7**   **Totally agree**

8. I will try to get my own back on my friend

Totally disagree   **1**   **2**   **3**   **4**   **5**   **6**   **7**   **Totally agree**

Scenario D
Imagine that you send a text message to a work colleague telling them about an embarrassing medical problem asking them to keep it secret. Your friend later forwards your message to a mutual friend.

Now please answer the following questions. **Please circle your answer:**

1. I feel it is acceptable for my friend to pass on the information

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

2. I feel betrayed by my friend

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

3. I feel I can trust my friend

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

4. I feel I can rely on my friend

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

5. I will fall out with my friend

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

6. I will forgive my friend

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

7. I will continue to tell my friend secrets

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

8. I will try to get my own back on my friend

Totally disagree   1   2   3   4   5   6   7   **Totally agree**

Appendix 6 – List of reasons for dislike from weblog study (Ch7)

It's 2007 a new year - a new epidemic. Last year it was bird flu - this year its chavs. we now face a threat of bein taken over by these burberry wearing people in souped up clios and corsas. o yes and they wil say its 2k7! so y do i hate these people? well many reasons really. u all know i dont like chavs.

1. the over obsession with burberry. once a coveted fashion material for those who were priveleged - now it graces our streets and towns!

2. do u have to drive your cars, blasting out tiesto or paul van dyke at full volume? jeez i mean any wonder u cant speak english if u cant hear what we r saying to you

3. the obsession with screen names starting with and ending with "2K7"

4. adding "ye-fuckin-ha!" to anything that sounds exciting

5. chavs are white people who want to be black. only they changed the word man for mate

6. they all act so feckin stupid when they probably r quite smart

7. you refuse to spell properly and deliberately spell things in a ridiculous way to make it sound cool - etc "du mi blog mate, r il fuckin knack ur ballix in ryt sunshyne!?" "aw hi skl 1s dey hav dare heds up dere own arses n dey cnt evn c fuckin nefn!" okkkk

8. i have no problem with wearin a baseball cap bt i mean y does soo much of it sit off ur head?? i mean the peak shud keep the sun out of your eyes bt WOW you must get blinded, coz that peak is nowhere near ur eyes or your head for that matter!? i just dont get it

9. FRED PERRY and adidas! dont mix them. GEEE like come on. have a bit of pride. fred perry is a label funded totally by chavs and old men who like their underwear. its jst not cool. firetrap, nike and k swiss - now THATS COOL!!

10. bebo pictures- photo albums full of UVF/UDA murals, rangers, linfield, everything R/W/B and hate for PSNI - and marching bands MILES AWAY!! join teh B.P.B. itl plz weir bt not East Belfast! also pictures of ur "homeys" and ur "biatches" . WAAAYY too many poses and cars in need for speed that will "be mine" someday!? stop livin in that pipedream world

See why i hate chavs? well if you do too and want to help them then please join me. for just £10 a month you can save your hubcaps of your car AND send 2 chavs to literacy classes so they can learn to read!! just call the "HELP A HOMEBOY HOTLINE" on 0845 2K7 2K7!

Appendix 7 – Results for individual items for questionnaire study in Chapter 5

Results for individual items from scenarios A and B

Question 1: I feel it is acceptable for my friend to pass on the information

- There is a significant main effect of method on whether participants find it acceptable for the friend to forward the sensitive information, $F(1,103) = 5.46$, $p = 0.021$ with participants indicating it more acceptable for sensitive information to be passed on face to face (Mean = 2.78) than via text message (Mean = 2.22).

- There is a significant interaction effect between recipient and age group on acceptability of passing on sensitive information, $F(3,103) = 6.76$, $p < 0.001$.

- Post hoc analysis revealed significant differences for 13/14 year olds ($F(1,26) = 10.62$, $p = 0.003$) who found it more acceptable to forward the message to a parent (Mean = 3.36) than a friend (Mean = 2.18) whilst 17/18 year olds found it more acceptable to forward the message to a friend (Mean = 3.27) than a parent (Mean = 2.01); $F(1,25) = 15.87$, $p = 0.001$.

Question 2: I feel betrayed by my friend - no differences detected

Question 3: I feel I can trust my friend

- There is a significant main effect of recipient on trust, $F(1,103) = 9.24$, $p = 0.003$. Participants indicated higher trust ratings if their friend had passed the sensitive information on to a parent (Mean = 3.42) than if they had passed it on to a friend (Mean = 2.84)

- There is a significant main effect of method on trust, $F(1,103) = 27.75$, $p = 0.012$. Participants indicated higher trust ratings if their friend had forwarded sensitive information face to face (Mean = 3.49) rather than via text message (Mean = 2.77)

- There is a significant interaction between recipient and method, $F(1,103)$

= 12.24, p = 0.001. In a face to face setting participants were more likely to trust a friend who forwarded sensitive information to a parent (Mean = 4.11) than a friend (Mean = 2.73). No further significant differences detected.

- There is a significant interaction between recipient, method and age, $F_{(3,103)} = 4.34$, p = 0.006.

- Post hoc analysis revealed significant differences for 13/14 year olds($F_{(1, 26)} = 4.91$, p = 0.036) who were more likely to still trust a friend who had forwarded sensitive information to a parent (Mean = 3.93) than to a friend (Mean = 3.29) in a face to face setting.

- Differences were also detected for 17/18 year olds $F_{(1,25)} = 8.47$, p = 0.007. They were also more likely to trust a friend who had forwarded sensitive information to a parent (Mean = 5.50) than a friend (Mean = 2.33) in a face to face setting.

Question 4: I feel I can rely on my friend

- There is a significant main effect of method on whether participants felt that they could still rely on the friend who had forwarded the sensitive information, $F_{(1,103)} = 5.21$, p = 0.024. Participants were more likely to continue to rely on the friend who had forwarded the sensitive information face to face (Mean= 3.46) rather than via text message (Mean= 2.78). No other significant differences were detected.

Question 5: I will fall out with my friend

- There is a significant main effect of recipient on whether participants will fall out with the friend who has forwarded the sensitive information, $F_{(1,103)} = 6.47$, p = 0.012. They are more likely to fall out with the friend who forwarded the information to a parent (Mean = 4.46) than to a friend (Mean = 3.97).

- There is a significant main effect of method on whether participants will fall out with the friend who has forwarded the sensitive information, $F_{(1,103)} = 4.05$, p = 0.047. Participants are more likely to fall out with the friend who has forwarded the information in a face to face setting (Mean

= 4.50) rather than via text message (Mean=3.93).

- There is a significant interaction between recipient and age $F_{(3,103)}$ = 3.11, $p = 0.03$

- Post hoc analysis revealed significant differences for 13/14 year olds, $F_{(1,26)} = 15.11$, $p = 0.001$ who were more likely to fall out with a friend who had passed the sensitive information on to a parent (Mean = 4.82) than to a friend (Mean = 3.32). No other significant differences were detected.

Question 6: I will forgive my friend

- There is a significant main effect of recipient on whether participants will forgive the friend who has passed on the sensitive information, $F_{(1.103)} = 20.64$, $p < 0.001$. Participants are more likely to forgive a friend if they passed the information on to a parent (Mean = 5.00) than to a friend (Mean = 4.22).

- There is a significant interaction between recipient and method, $F_{(1,103)} = 4.86$, $p = 0.003$.

- Post hoc analysis revealed that participants are more likely to forgive a friend who has forwarded sensitive information to a parent (Mean = 5.38) in a face to face setting than to a friend (Mean = 4.22). No further significant differences were detected.

Question 7: I will continue to tell my friend secrets

There is a significant main effect of recipient on whether participants will continue to tell the friend secrets, $F_{(1,103)} = 6.69$, $p = 0.011$. Inspection of the means indicates that participants are most likely to continue to tell secrets to the friend who forwarded sensitive information to a parent (Mean = 3.29) than to a friend (Mean = 2.83).

Results for individual items from scenarios C and D

Question 1: I feel it is acceptable for my friend to pass on the information

- No main effects detected however there is a significant interaction between recipient, method and age, $F_{(3,103)} = 2.84$, $p = 0.042$. Due to

the conservative nature of the Bonferroni correction, post hoc analysis did not reveal where the differences lay.

Question 2: No differences detected
Question 3: No differences detected
Question 4: No differences detected
Question 5: No differences detected

Question 6: I will forgive my friend

- There is a significant interaction between recipient and method, $F_{(1,103)}$ = 7.95, p = 0.006. Post hoc analysis reveals that participants are more likely to forgive someone who forwards sensitive information to a parent (Mean = 4.59) in a face to face setting than to a friend (Mean = 3.69); $F_{(1,58)}$ = 4.53, p = 0.037.

- There is a significant interaction between recipient, method and age, $F_{(3,103)}$ = 8.31, $p < 0.001$. Post hoc analysis reveals significant differences between 13/14 year age group and the 17/18 year age group, $F_{(3,58)}$ = 8.42, $p = < 0.001$. 13/14 year olds were more likely to forgive someone who forwards sensitive information to a friend in a face to face setting (Mean = 4.71) than via text message (Mean = 4.29) whereas the 17/18 year age group who were more likely to forgive someone who forwards sensitive information via text message (Mean = 4.80) than face to face (Mean = 1.75).

Question 7: No differences detected
Question 8: No differences detected

Appendix 8 – Results for differences in age groups detected in questionnaire study in Chapter 5

Results for individual items from scenarios A and B

Age differences detected in questions 1, 3 and 5 only.

Question 1: I feel it is acceptable for my friend to pass on the information

- In terms of age, there is a significant interaction effect between recipient and age group on acceptability of passing on sensitive information, $F(3,103) = 6.76$, $p < 0.001$.

- Post hoc analysis revealed significant differences for 13/14 year olds ($F(1,26) = 10.62$, $p = 0.003$) who found it more acceptable to forward the message to a parent (Mean = 3.36) than a friend (Mean = 2.18) whilst 17/18 year olds found it more acceptable to forward the message to a friend (Mean = 3.27) than a parent (Mean = 2.01); $F(1,25) = 15.87$, $p = 0.001$.

Question 3: I feel I can trust my friend

- There is a significant interaction between recipient, method and age, $F(3,103) = 4.34$, $p = 0.006$.

- Post hoc analysis revealed significant differences for 13/14 year olds($F(1, 26) = 4.91$, $p = 0.036$) who were more likely to still trust a friend who had forwarded sensitive information to a parent (Mean = 3.93) than to a friend (Mean = 3.29) in a face to face setting.

- Differences were also detected for 17/18 year olds $F(1,25) = 8.47$, $p = 0.007$. They were also more likely to trust a friend who had forwarded sensitive information to a parent (Mean = 5.50) than a friend (Mean = 2.33) in a face to face setting.

Question 5: I will fall out with my friend

- There is a significant interaction between recipient and age $F(3,103) = 3.11$, $p = 0.03$

- Post hoc analysis revealed significant differences for 13/14 year olds, $F(1,26) = 15.11$, $p = 0.001$ who were more likely to fall out with a friend who had passed the sensitive information on to a parent (Mean = 4.82) than to a friend (Mean = 3.32). No other significant differences were detected.

Results for individual items from scenarios C and D

Age differences detected for questions 1 and 6 only.

Question 1: I feel it is acceptable for my friend to pass on the information

- No main effects detected however there is a significant interaction between recipient, method and age, $F(3,103) = 2.84$, $p = 0.042$. Due to the conservative nature of the Bonferroni correction, post hoc analysis did not reveal where the differences lay.

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Question 6: I will forgive my friend

- There is a significant interaction between recipient, method and age, $F(3,103) = 8.31$, $p < 0.001$. Post hoc analysis reveals significant differences between 13/14 year age group and the 17/18 year age group, $F(3,58) = 8.42$, $p = < 0.001$. 13/14 year olds were more likely to forgive someone who forwards sensitive information to a friend in a face to face setting (Mean = 4.71) than via text message (Mean = 4.29) whereas the 17/18 year age group who were more likely to forgive someone who forwards sensitive information via text message (Mean = 4.80) than face to face (Mean = 1.75).