Computer Mediated
Communication, Social Networking Sites &
Maintaining Relationships

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Declaration

No portion of the work referred to in the thesis has been submitted in support of an application for another degree or qualification of this or any other university or institute of learning.
Dedication

This is for you, my Mother WaraBibi and my Father Saeed Ahmad.....
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Most of all I am grateful to God for helping me get through the difficulties and giving me the strength to continue and finish this work.
Abstract

The past decade has witnessed a proliferation of internet use for socialising with dedicated websites such as Facebook, and also for maintaining relationships using computer mediated communication. Individuals can extend the boundary associated with traditional forms of communication, and use technology to meet strangers online to share interests, or maintain existing relationships remotely. One of the most significant functions of computer-mediated communication (CMC) is its contribution to the evolution of social communication. CMC is “communication that takes place between human beings via the instrumentality of computers” (Thurlow, Lengel, & Tomic, 2004). As a consequence of the convenience and flexibility that this channel provides, CMC can be effectively used to orchestrate a variety of communication situations. Furthermore, social networks sites are becoming the choice in which individuals are maintaining relationships or meeting new people. The potential distinctions between these relationships and their offline counterparts remain contradictory. Online relationships may face different challenges, such as anonymity, restricted interaction (Walther, 1992), and the lack of physical presence. For example, sharing activities online such as playing games or visiting Web sites together differs from offline activities, such as going to the movies or dining together. These observations question whether CMC relationships have any parallels with real world relationships. Dunbar (1992) structured real world relationship by strength of ties and formulated the social brain hypothesis (SBH). This work uses the SBH as an interpretive lens in analyzing CMC relationship ties.

Thus, a major focus of this work is to investigate implications of the SBH (Dunbar, 1992) within the context of CMC usage. It is recognised that CMC allows for the maintenance of a large number of friendships. Thus potentially, the use of CMC could alter the SBH ratios. Within the main findings consistency with SBH was found. Furthermore, CMC has many parallels with real world communication methods. Face-to-face communications were strongly preferred for maintenance of strong ties. Also phone usage was analysed and identified as an indicator of strong tie relationships, for both local and distant communications. The findings also address questions on displaced communities communication habits and their use of CMC. The phone was found to be most popular media and culture had a strong influence on communication content.

The research used a mixed method approach, combining data collection via questionnaires, semi structured interviews and a diary study completed by participants. Based on the findings, a framework is proposed categorising groups on their level of real world socialising and CMC use. There are four essential contributions impacting on current theory. The findings offer new knowledge within the research of CMC and relationship maintenance theory. In our understanding these exploratory questions have not yet been addressed and therefore the findings of this research project are significant in their contributions.
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Chapter One: Introduction

1.1 Introduction
This chapter introduces the research project by providing a context, and identifying the current gaps within the research literature. The chapter also describes the motivation for the study, the research objectives and outlines the structure of the thesis. This chapter underpins the foundations for the research undertaken and the importance it has in contributing to current knowledge within the field.

1.2 Research Motivation
During the past decade the proliferation of the Internet and its social use around the globe has changed the face of communication. Technological advancements have afforded the Internet to host a vast array of web activities ranging from simply finding information, to connecting with other people as a social activity. In addition, modern technology has provided new and innovative ways for people to communicate and improved both the speed and the ease of long distance communication. People are now able to stay in contact with one another through the use of social networking sites, in addition to emailing, video conferencing and texting.

The process of interpersonal communication cannot be regarded as a phenomenon which simply 'happens', but should be seen as a process which involves participants negotiating their role in this process, whether consciously or unconsciously. Senders and receivers are vital in the communication process. In written communication the sender and receiver are more distinct; while in face-to-face communication the dynamic interactions of the sender and receiver are difficult to separate if we consider very subtle ways such as eye-contact (or lack of) and general body language. There are many other ways that we communicate (perhaps even unintentionally) with others. For instance, the tone of our voice can give
clues to our mood or emotional state, whilst hand signals or gestures can add to a spoken message. With the advent of new communication channels it is worth considering the range of media and functions offered. Computer Mediated Communication has the ability to change social relationships, as it overcomes the constraint of time and distance, allowing individuals to interact in communication episodes and intimate exchanges. However, the strength of a relationship may diminish when face-to-face encounters are not possible (Dunbar, 2011), leading to a key consideration whether technology supports the maintenance of intimate relationships.

1.2.1 **Computer Mediated Communication**

Human communication has evolved through the use of advanced technologies, such as computer mediated communication. One of the most significant functions of computer-mediated communication (CMC) is its contribution to the evolution of social communication. CMC allows individuals to extend socializing beyond the traditional methods of communication. For example, it enables individuals to meet strangers online with shared interests and increase the chances of mass communication (e.g., emails); restrict information (e.g., anonymity on online forums), manage dependencies (e.g., Google Calendar), archive one's past (e.g., saved emails), or it can help establish identity (individual or group) through naming (e.g., having one's title within their email address) (Resnick, 2002). CMC is a widely accepted concept that has been appropriately applied to illustrate the communication process (Alexander, Dawson, & Ichharam, 2006). As a consequence of the convenience and flexibility that this channel provides, CMC can be effectively used to orchestrate a variety of communication situations.

The telephone is a long established CMC medium, which has facilitated long distance communication, since its invention in the 1870s; some people predicted that it would make the world smaller, increase contact between peoples of all nations and lead to world peace.
Others went further predicting that the telephone would bring people much closer together based on personal attraction and shared interests which ‘would transcend the boundaries of residence area’ (Aronson, 1971). This prediction turned out to be incorrect and the telephone was mainly used as a tool to reinforce existing relationships, rather than forming new ones (Pool, 1977). However, CMC has transcended its expectations and has propelled communication to previously unimagined heights; it is a ubiquitous way of interacting with friends and family, between businesses, and even with strangers. For example, individuals can ‘meet’ people from the other side of the world without leaving the comfort of their armchairs. Furthermore, the technology allows for individuals to retrieve previous communication (instant messaging, email), with full control of the information flow (privacy) and the option of an individual or group ‘identity’ (Resnick, 2002). It could be argued that these ‘socio-technical’ advances were predicted by Rheingold in the early 90s (1993) when he alluded to the internet of having the capacity of bringing complete strangers together to form intimate online networks. However, this was in contrast to views that social networking would provide, an ‘illusion of community’ (Parks & Floyd, 1996) or ‘categorical identities’ which were inferior to the ‘dense, multiplex, or systematic web of interpersonal relationships’ shaped in worldly co-presence (Calhoun, 1998).

Interpersonal communication is the principal use of the Internet at home (Kraut et al., 2002); but this finding raises questions on whether domestic social interactions and relationships on the Internet are equal in quality and intimacy as traditional social interactions and relationships (Kraut et al., 2002). Kraut (2002) argues that “perhaps, by using the Internet, people are substituting poorer quality social relationships for real tangible relationships, that is, replacing strong ties with weak ties”. Due to the technology, on line relationships are potentially numerically superior to traditional forms of socializing. Thus, an understanding is needed for how CMC influences social interaction in maintaining
relationship ties. Furthermore, recent developments in the social networking arena must be considered in a research project involving social network maintenance.

1.2.2 **Social Networking Sites**

Social networking sites (SNS) such as LinkedIn and Facebook have intensified the development of social relationships. These SNS applications allow members to create a profile page for either professional or more routine social purposes, such as maintaining friendships. These sites invite users to build a list of friends or contacts, allowing them to stay in touch with friends and family both nationally and internationally; distance is no longer a barrier to communication.

1.2.3 **Social Brain Hypothesis**

Dunbar (1998) developed the Social Brain Hypothesis (SBH) that determined a limit, of 150, on a human’s cognitive ability in maintaining interpersonal relationships. Dunbar’s observations, originally with primates, were based on group social cohesion including social grooming, and human social interaction. Considering Dunbar’s (1998) hypothesis, and the limit of 150, a structure is defined, aggregated at levels of emotional strength.

Within the structure, closest relationship ties exist at the centre (3-5), and these alters are defined as the support clique. Moving outwards, the next group (12-15) is the sympathy clique – these relationships are still considered intimate. Moving out again the relationship strength correspondingly weakens.

Weak ties are understood to need less maintenance, compared to strong ties who supply intimate companionship and emotional support (Dunbar, 2011). It is understood (Chan & Cheng 2004; Cummings et al., 2002; Short et al., 1976) that CMC allows a large number of trivial or weak tie friendships to be maintained. Thus potentially, the use of CMC, without Dunbar’s numerical constraints, could conceivably alter the SBH ratios.
1.3 Problem statement

While many studies have examined various aspects of social relationships in terms of development, perception, impression management, and relational norms online (Baym, 2000; Preece, 1998; Walther & Boyd, 2002) and offline (Byrne, 1961; Baumeister, 1995; Dainton, 2000; Canary & Stafford, 1994) studies have shown conflicting findings. Some argue that CMC liberates interpersonal relationships from the confines of physical locality, creating opportunities for new, but genuine, personal relationships and communities (Parks & Floyd, 1996). An opposing view is that a reduction in social cues impairs communication; for example, cues about the physical context are missing as are non-verbal cues, physical qualities, body movements, facial expressions and appearance (Daft & Lengel, 1986).

We are interested in whether SBH holds when we consider Computer Mediated Communication (CMC) patterns. Furthermore, we investigate how individuals use SNS to maintain interpersonal relationships. Relationships exist at different strengths. For example, Best Friend Relationships are more intimate than Close Friend (Dunbar, 1998). Therefore of interest is how CMC is used and the patterns of use.

Geographic proximity is one of the most common reasons for friendship disintegration (Rose, 1984). The effects of proximity on relationships become apparent when long distance inevitably reduces the amount of both planned and chance face-to-face social interaction, necessary for relational maintenance. However, little is known how individuals interact with technology when proximity presents constraints on physical encounters. Some forms of companionship and exchanges of support, such as getting advice or discussing emotional issues, may be immune to distance, others, such as going out to see a film or going for dinner, are dependent on physical presence. Changes in physical proximity may motivate changes in frequency of communication as movers would rely on mediated communication.
to accomplish interactions that were primarily face-to-face meetings prior to the move (Kraut, 2008). Kraut (2008) states the precise role that different communication technologies play in the development and maintenance of social relationships has been difficult to isolate. CMC affordances mitigate effects of time and space, and therefore it is appropriate to investigate distant relationships.

It is recognised (Braithwaite et al., 1999; McKenna et al., 2002) that CMC offers great advantages for maintaining relationships. However, in many cases face-to-face is a requirement in sustaining a relationship (Rose, 1984). Distance, is cited as the most common reason for relationship decay (Rose, 1984). Hence we consider if SBH holds when distance is a constraint and, under this constraint, if CMC can be substituted for face-to-face communication. Using the SBH and the categories of relationship strength to distinguish between relationship types, we can examine the intensity of relationships within the context of CMC. This approach represents a novel way of understanding how individuals use CMC in maintaining relationships.

To summarise, Dunbar’s (1998) SBH will be used through an interpretive lens in chapters 4 and 6. Parallels with the original SBH will be investigated. The focus elements of the research project are given in the diagram (figure 1.1). Given the original SBH which focused on real world relationships, extensions included in this research project are: the relationships maintained using CMC and the influences of proximity.

Figure 0.1. Conceptual framework used as part of the foundation for this research project
From figure 1.1, a mapping is seen between current SBH theory and real, non-CMC, relationships. This research project examines CMC extensions that may exist, and create parallels to the original SBH. Thus the framework also represents the scope of this project.

An analysis of the impact of the Internet must consider how individuals interact with the technology, specifically SNS; what information is reciprocated, and how users are motivated to use the technology. Of interest are SNS features passed between friends and whether these exchanges differ, depending on the level of closeness. For example, best friends may use wall posts more than close friends. It may be possible to identify a relationship between relationship tie strength and SNS features used.

### 1.4 Aims and Objectives

The aim of the research is to

1. Investigate parallels with SBH, when CMC is used in relationship maintenance.
2. How SNS are used in relationship maintenance.

The following research questions are exploratory and the research project aims to determine how use, attitudes and motivation are associated with maintaining relationships and CMC.

The research project builds on previous ‘real world’ research and extends it into the online world, to determine what difference CMC makes to SBH.

1. Within the Support and Sympathy clique as defined by the Social Brain Hypothesis (SBH): do intimacy patterns correspond to SBH?
2. How is CMC, and in particular SNS, integrated within the lives of users in maintaining relationships?
3. What are the patterns of CMC use in maintaining different strength relationships, located and co-located?
4. How is CMC utilised for geographically remote intimate & personal relationships

To ensure triangulation, a mixed method approach will be applied. The first method is quantitative and used to test a number of hypotheses and measure the parallels with SBH.
The second method is qualitative, providing a richer picture by answering questions on motivations, adaptation strategies and how the technology is used. This information will be derived from individual interviews.

### 1.5 Thesis Structure

A brief description of the chapters will be offered within this section. This will provide the reader with the structure map of the entire thesis. Below is the current view of the structure in table form. The Introduction sets the scene and provides context to the research project; this is followed by the literature review that will analyse empirical studies carried out within this area, and will also inform the methodology.

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*Table 1.1: Structure of Thesis*

**Chapter two** provides a review of the empirical literature on the Social Brain Hypothesis, Computer mediated communication and Social Networks was carried out in order to address
the basic questions on maintenance of interpersonal relationships through computer mediated communication. Types of computer mediated communication modes, social relationships and motivation are explored.

**Chapter three** presents the research approach, and considers the philosophical perspective to the research, and also describes the mixed method strategy used to answer the research questions and achieve the research objectives.

**Chapter four** describes the results from the first quantitative study. The chapter measures parallels with the Social Brain Hypothesis, using the inner most layers: support and sympathy clique. Also, it presents data on emotional closeness by technology & proximity

**Chapter five** presents the results from the first qualitative study. Semi structured interviews were conducted with 30 participants; the outcome of these interviews is assessed. The transcripts were developed into in-depth narratives for describing individual experiences. Also, anomalies are identified and a framework is produced from the interview data.

**Chapter six** presents the results from the second quantitative study. Ego preference for computer mediated communication modes, and frequency of use are presented. Formal face-to-face interviews were conducted with ten experienced Designers; the outcome of these interviews is assessed. Differences and commonalities between all three studies are discussed. Finally this chapter concludes the experimental evaluations for the three studies.

**Chapter seven** outlines the results from a diary study with the Pashtun diaspora and their use of CMC. Communication content and CMC mode were recorded and presented.
Chapter eight discusses the implications of the research carried out in order to determine to what extent the aims have been met. The research questions are re-visited and results discussed. Theoretical contributions, limitations of the research project and future work is presented.
Chapter Two: Literature Review

2.1 Introduction
The purpose of this chapter is to review the literature on interpersonal relationships, social ties and the role of technology in maintaining social ties. In particular, the literature on the use of computer mediated communication (CMC) and social networking sites (SNS) will be assessed to determine to what degree the literature identifies any underlying causal theories, and to identify gaps within the current research. Definitions of CMC and SNS will be presented in the general context of the Internet. This review will provide the foundation for the current research, and justify why this research project was undertaken.

2.2 Interpersonal Relationships
An interpersonal relationship can be described as a relatively long-term association between two or more people. These associations include kinship, friendships and acquaintances. For example kinship will include father, mother, son, brother, sister, son, daughter and other immediate family members, such as grandparents, uncles and aunts. Family relationships can also be established by marriage, such as husband, wife, father-in-law, mother-in-law, uncle by marriage, or aunt by marriage. Friendships usually imply the discovery or establishment of similarities or common ground between the individuals (Byrne, 1961). Psychologists have argued that humans have an innate motivational drive to form and maintain caring interpersonal relationships. According to this view, people need both stable relationships and satisfying interactions with others. If either of these two factors is missing, people will begin to feel anxious, lonely, depressed and unhappy (Baumeister, 1995).

2.2.1 Social Networks
Theories of interpersonal relationships have tended to examine factors involving both how individuals first initiate (Mesch & Talmud, 2007; Morahan-Martin & Schumacher, 2003) and
develop relationships with others, and how relationships are maintained over time. 
Motivational attributes can have a strong presence on the nature of a relationship. For example, intimacy, positive emotion and support are often found in deep and meaningful relationships. Brown and Brown (2006) use the term Selective Investment Theory (SIT) to describe the investment of time and emotion in the maintenance of a relationship. According to this theory close relationships defined by social bonds motivate costly long-term investment (CLI) of time and energy to maintain relationships. This is particularly relevant in a parent and child relationship. Brown and Brown (2006) concluded that relationship maintenance is motivated from an altruistic perspective, such as caring for the sick or injured, and protecting family and comrades in times of conflict or war. They propose that social bonds override self-interest and motivate costly investment in others. In contrast Dunbar (1998) identifies the motivating factor as selfishness and relationships are conducted to avoid negative emotion, unhappiness and loneliness.

Dunbar (2008) suggests humans have a hierarchy of social relationships based on emotional intensity. His Social Brain Hypothesis (SBH) describes human social networks in terms of size and structure, asserting that individuals have four layers of friends depending on emotional closeness. The innermost layer has on average five members (the support group) where individuals seek advice and support in times of distress or financial hardship (Dunbar & Spoors, 1995). The next outer layer may have between 12-15 members, defined as the sympathy group (Buys & Larson, 1979; Dunbar & Spoors, 1995). The last two outer layers include the affinity group of 50 members and the outer weak ties/ social layer of approximately 70, giving a complete network of 150 members (see Figure 2.1) (Dunbar, 2002). Hill & Dunbar (2003) refer to this hierarchy as the ‘active network’, in which the individual (ego) has a personal relationship with other (alters), and makes a conscious effort to keep in touch. This active network may be prone to decay if contact is reduced (Burt,
2500), and therefore active maintenance is required to prevent a decline and keep relationships at a particular level of emotional intensity (boyd, 2009; Cummings et al., 2006; Oswald & Clark, 2003). In a longitudinal study Dunbar (2010) examined kin and friend relations and found that “Friendships required more maintenance, in terms of communication and performing activities together, than kin relations to sustain particular levels of emotional intensity” (Dunbar, 2010). The inference is that friends, even at the closest level, need active maintenance to prevent decay.

Figure 0.1: Dunbar’s (2002) Social Brain Theory

Research on maintaining friendships also suggest relationships require significant investment in time and resources (Dainton, 2000), exchanged through communication episodes (Canary & Stafford, 1994). A maturity development model is presented by Altman & Taylor (1983), outlining four stages of relationship development based on the concept of communication being a critical component in developing and maintaining interpersonal relationships (Canary & Stafford, 1994).
The stages:

- **Orientation:** an initial "appraisal" and acquaintance stage.

- **Exploratory affective exchange:** a springboard for movement towards intimacy when relationships are friendly and relaxed although, intimate communication at this stage in limited.

- **Affective exchange:** is the stage when relationships grow closer and more intimate through extensive exchange of intimate information. This is a process of relationship maturation, as interactions become more unstructured, casual and more personal, achieving greater mutual understanding.

- **Stable exchange** is a continuous openness and reliability, where friends know each other well enough to be able to predict each other’s behaviour and discuss intimate details of daily life. Altman & Taylor theorise that friends at this stage can confidently expect to receive support in time of need.

This theory suggests that communication and behavioural strategies, concerned in developing and maintaining relationships, may differ depending on the stage of development. For example, at the stable exchange stage, intimate relationships can tolerate more imbalances and can become “self-sustaining” (Wright, 1984). Therefore, friendships that have reached the stable exchange stage should be less affected by changes (or decline in frequency of contact) and separation due to geographical distance. This is due to the level of energy and effort required to maintain the other party, which should be less. Furthermore, the history of interactions has developed sufficiently to give the relationship momentum even in the absence of support and interaction (Altman & Taylor, 1987). Rose & Serafica (1986) in their study of friendship types showed that best friendships were indeed less affected by changes in proximity than casual friendships. Yet, while people may tend to relegate best friendships to "self-maintaining" status, their descriptions of actual best
friendships suggested that interactions in the form of letters, phone calls, visits or exchange of gifts are still necessary for maintenance.

2.2.2 Social Ties

Not all relationships are strong close relationships. Relationships can be split in two major categories: weak ties, or individuals who are considered just acquaintances, differentiated from family and friends which are strong ties (Granovetter, 1983). A third category, ‘casual friends’ categorises individuals who fall between a strong and a weak tie (Wellman et al., 1996, Granovetter, 2004). Unlike kin relationships, close friendships usually start out as basic acquaintances and go through a developmental process towards an intimate level of a close friendship (Altman & Taylor, 1983). Unfortunately, research on friendships has primarily focused on close friendships, ignoring relational processes that might emerge in weak relationships (Hess, et al., 2007). Granovetter (2004) argues that weak social ties are mainly responsible for establishing the structure of social networks in society dominate the transferences of information through these networks. Individuals are able to source more new information through weak ties rather than strong ties. This may be due to close friends (strong ties), providing information that is already known. In contrast, acquaintances provide more novel information. It should be noted that this argument does not discount the importance of strong ties, which offer the advantages of availability and familiarity, but rather suggests that individuals outside a person’s immediate social circle are more likely to bridge gaps in knowledge (Granovetter, 2004). Lin (2001) suggests ties between individuals facilitate the flow of information and these ties can exert influence over others, thus benefiting the individual. For example, social ties often equal social credentials, meaning that interpersonal relationships can help one get ahead. Interpersonal relationships reinforce an individual’s identity and, subsequently, his recognition (Lin, 2001). Thus, maintaining relationships with both strong and weak ties may benefit individuals in social networks.
2.3 Social Interaction and Relationships

Maintaining relationships successfully has been linked to several positive outcomes, including relational satisfaction and longevity (Vangelisti & Huston, 1994; Wallerstein, 1995). According to Dindia and Canary (1993), relational maintenance is necessary to keep relationships in a stable and satisfactory condition, and proactive maintenance may help relational partners avoid problems leading to a breakdown in the relationship. Academics, studying interpersonal relationships, have identified several behaviours affecting relational maintenance; these include mundane everyday routines, such as sharing tasks or engaging in joint activities, to more strategic behaviours such as intentionally calling a friend to provide support for some crisis (Canary & Stafford, 1994; Canary et al, 1993; Dindia & Baxter, 1987). These strategies also include conveying openness or willingness to communicate with a partner, being positive during interaction, assuring and supporting each other, communicating affection, spending time with important members of a partner's social network, and avoiding potentially negative topics or unfriendly behaviours (Walther, 2004). However, the types of maintenance strategies chosen in relationships will vary depending on the stage of the relationship (Stafford & Canary, 1991).

With the rise of computer mediated technology (CMC) individuals are able to maintain relationships with relative strangers and acquaintances, even though they are separated over time and distance. For example, members of chat rooms often report interacting frequently with people who are either anonymous or mere online acquaintances (Wood & Smith, 2001). Other individuals may use the Internet to maintain long-distance relationships with people they have met face-to-face, and these relationships may include acquaintances, friends, and family members. These technologies extend the traditional methods of communication, enabling individuals to meet strangers online with shared interests and increase the chances of mass communication (Resnick, 2002).
Dunbar & Roberts (2010) posed the question, whether CMC enable larger network sizes, and cited evidence from Ellison et al. (2007) that CMC does indeed allow for larger network sizes. Part of this research project examines the quality of relationships with regards to CMC and Face to Face communication.

Face-to-face relationships studies suggests individuals select potential relationships based on physical attractiveness, for example, qualities such as personality, intelligence, similarity, and social desirability are often found in relationship development models (Lea & Spears, 1995). However, in CMC physical presence is impaired and less relevant. Therefore, traditional models of relationship development become redundant. The Dialectical Theory (Baxter, 1990) suggests intimate relationships deal with three contradictions: autonomy vs. connectedness, novelty vs. familiarity, and openness vs. closeness. Individuals who meet online can form relationships and experience real emotions and relationship progression (Baxter, 1998); however, this research project does not discuss the longevity of intimate relationships online. At some point relationships need to move into the real world in order to satisfy the physical intimacy normally present between social partners. Parks & Floyd (1996) found relationships that begin online often move to telephone, letters, or meeting face to face. However, individuals who struggle in finding relationships in real social settings may use CMC to overcome their difficulties and form meaningful relationships with authentic emotions. Lea and Spears (1996) note that the role of CMC, in forming personal relationships, is neglected, largely because studies have focused on direct face-to-face interaction as the primary vehicle for relationship formation.

Gender issues are often raised in studies of the closeness of interpersonal relationships. Studies of same sex and cross sex relationships have been carried out (Griffin & Sparks, 1990; Roy, Benson & Lilly, 2000), with much of the work focusing on romantic ties. This research project is not concerned with the emotional bond attaching pairs but rather on the
strength of the relationship. Other studies (Parker & de Vries, 1993) reported same sex relationships were larger in number, by a factor of two, compared to cross sex relationships. Also Curry & Dunbar (2013) stated that strictly female to female relationships measured more emotionally closer, compared to male same sex relationships. Consequently, gender is a factor used in this research project.

2.4 Computer Mediated Communication

Whilst previous research has considered the implications of CMC technologies on social relationships, few studies have attempted to develop a deeper theory-motivated understanding of why these technologies are successful. The impact of CMC has produced contradictory results, with some surveys (Kraut, 1998) suggesting that the Internet detracts from face-to-face social behaviour; others have found that the Internet helps to maintain existing friendships rather than helping form new friendships. Moreover, some studies on the impact of online communication on social ties have reported communication as positively correlated with using email and other chat applications, but negatively correlated when users undertook more solitary tasks, such as surfing the web (Zhao, 2006). Kraut et al., (2002) found that individuals using the Internet for social purposes also maintained their offline relationships (Kraut et al, 2002; Zhao, 2006). Questions about whether the number of virtual friends is equivalent to real friendships or even acquaintances remain unanswered.

Early research predicted the telephone would enable individuals to “develop intimate social networks based on personal attraction and shared interests that transcended the boundaries of residence areas” (Kraut, 1998). This prediction is generally incorrect and the telephone, in the context of relationships, is mainly used as a tool to reinforce existing associations, rather than forming new ones (Kraut 1998). However, CMC advances communication to new levels and has become a ubiquitous way to interact with friends and family, businesses, and even
strangers. For example, individuals can “meet” people from the other side of the world without getting out of their chair. The technology allows individuals to archive previous communication (instant messaging, email), having full control of information flow (privacy), and the option of providing an individual or group “identity” (Resnick, 2002). It could be argued that these “socio-technical” advances were predicted by Rheingold (1993); he described the internet as being capable of bringing strangers together to form intimate online networks. However, this is in contrast to the view that social networking technology only provides the “illusion of community” (Parks & Floyd, 1996) or “categorical identities” which are inferior to the real world relationships described by Calhoun (1998).

Researchers believe the internet is transforming social and economic life and may be causing people to become socially isolated and disengaged from genuine social relationships (Turkle, 1996, Putman, 1995). Putnam (1995) found a broad decline in civic engagement and social participation in the past 35 years. Citizens vote less, go to church less, and discuss government with their neighbours less. He argued that this form of social disengagement is having major consequences for the social fabric and on individual lives. At the societal level, social disengagement is associated with more corrupt, less efficient government and more crime. When citizens are involved in civic life, their schools run better, their politicians are more responsive, and their streets are safer. At the individual level, social disengagement is associated with poor quality of life and diminished physical and psychological health.

Kraut et al. (1998) found Internet use was detrimental to real world interpersonal relationships. Kraut (1998) used the term “Internet paradox” from observing that using the Internet and technology for social contact led to reduced real world social interaction. This paradox theory was supported by studies that showed that greater use of the internet, leads
to reduced time in real world relationships with friends, family, and colleagues (Nie, Hillygus & Erbring’s, 2002).

In a further study, Kraut et al. (2002) contradicts his earlier work by finding that “Participants who used the Internet more had larger increases in the size of their social circle, and their face-to-face interaction with friends and family increased”. Other studies also found Internet users were likely to spend more time communicating face-to-face and over the phone with family and friends, when compared to those who did not (Robinson, Kestnbaum, Neustadtl & Alvarez, 2000).

Academics have argued that the Internet frees individuals and groups from the constraints of time, space and physical restrictions, allowing social interaction via common interests rather than convenience (Katz & Aspden, 1997; Rheingold, 1993). Kraut et al., (2002) found interpersonal communication is the dominant use of the Internet at home, but this did not imply that their social interactions and relationships on the Internet are the same as their traditional social interactions and relationships. Therefore, humans have the desire to network, and using online social networking sites seem to satisfy a need that is different from simply using email, chat and blogging tools separately.

2.4.1 CMC Affordances

Many studies have examined various aspects of relationships in terms of development, perception, impression management, and relational norms online (Baym, 2000; Preece, 1998; Walther & Boyd, 2002), and offline (Byrne, 1961; Baumeister, 1995; Dainton, 2000; Canary & Stafford, 1994). Parks and Floyd (1996) argued that CMC liberates interpersonal relationships from the confines of physical locality to create opportunities for new, but genuine, personal relationships and communities. An opposing view argues that the reduction in social cues dilutes the richness that can exist within a relationship. For example,
cues about the physical context are missing, as are non-verbal cues, physical qualities, body movements, facial expressions, and appearance (Daft & Lengel, 1986). Daft and Lengel (1986), in their Media Richness Theory (1986), found that CMC is limited in its ability to replicate face-to-face communication. In addition, studies have reported users having greater difficulty recognising and moving towards shared points of view (Kiesler & Sproull, 1992). They suggest these social disadvantages may prevent positive relationships from occurring frequently in on-line settings. A further disadvantage in forming online relationships is identity manipulation (Lea & Spears, 1995). This may be harmless in terms of an individual’s desire to increase their social status or “look better” to the others. However, relationships may be harmed by inaccurate information portrayed about oneself, particularly if the two participants were to meet face-to-face.

In contrast, Rice and Love (1987) found that CMC systems can support “socio-emotion” communication. Emotion in terms of facial expressions and behaviour is to some degree replicated online through the use of emoticons. For example, smiley or sad faces represented by or capital letters to indicate SHOUTING. Walther (1992) points out that these visual suggestions conceptualise the message and are becoming conventions among CMC users. In addition, Dunbar (1998) states that a “great deal of linguistic communication online is based on metaphor: Understanding the intentions behind a metaphor is crucial to successful communication. However, “failure to understand these intentions commonly results in confusion or inappropriate responses” (Dunbar, 1998).

Social presence theory states that self-disclosure, development of trust, and communication of intimacy are all possible on-line (Lea & Spears, 1995). Users in online communication tend to employ knowledge, generating strategies such as interrogation, self-disclosure, deception, detection, and deviation testing to gather deeper psychological information about other users (Walther, 1992). While the process for relationship development may be slower
in CMC medium, Walther (1992) states that “textually conveyed information about persons and their characteristics would accumulate because communicators in CMC, like other communicators, are driven to develop social relationships”.

According to Walther (1992), online relationships have restricted interaction and physical presence. For example, sharing activities online such as playing games or visiting Web sites together differs from offline activities, such as going to the movies or dining together. However, the distinctions between relationships that primarily use CMC, and those that do not, remain unknown, potential interceding variables also remain unknown (Walther, 2004). Therefore the SBH (1996) will be used within this research to distinguish between different strength relationships. In addition, activities carried out online and offline with various types of relationships, communication content, and motivation will be explored within this research.

2.4.2 Communication properties of CMC technologies

CMC media can be identified as synchronous and asynchronous. The term ‘synchronous’ is used when a communication enables immediate response between two or more parties. For example Instant Messenger and video conferencing enable exchange of text, audio and visual images in real time – much like the traditional telephone. Asynchronous communication is evident when the communicators may not be online at the same instant in time. For examples, an Email can be read sometime after receipt. Spontaneity is rarely evident in asynchronous communication, and thus the sender can take more time in considering the content the communication.

2.4.2.1 Email

E-mail is a communication technology that enables users to send messages in the form of electronic letters. Email is a form of asynchronous communication, where an individual
sends a message and the receiver retrieves it at their convenience. Baym (2002) argues that the asynchronous nature of email is a key feature because it expands the potential for interpersonal interaction, and the main reason why people go online in the first place (Baym, 2002). Stafford, Kline, and Dimmick (1999) analysed the use of electronic mail in households and found that 61% used email for relational maintenance in interpersonal relationships. The participants rated email as a popular form of communication due to its low cost, ease of use, and its ability to cross geographical boundaries. Horrigan and Rainie (2002) interviewed a sample of 1,500 internet users and found that 84% used email for maintaining communication with family members; 70% was for advice, and 63% to discuss worries. These figures may suggest individuals feel comfortable using email to discuss intimate issues that may be private.

In contrast Cummings et al. (2002) report that in three studies; a survey of 979 employees of a national bank, and 39 students, both groups found that email was less effective than Face-to-face contact in creating and maintaining close social relationships. In two of three studies, focusing on communication in non-Internet and Internet relationships mediated by Face-to-face, phone, or email modalities, they found that the strength of the relationship was predicted more accurately by the frequency of Face-to-Face and phone communication, as participants rated email as an inferior means of maintaining personal relationships, compared to Face-to-Face and phone contacts (Cummings et al., 2002).

Other research has tested the ability of individuals to maintain psychological closeness using email with friends after moving away (Shklovski et al., 2008). Although after moving, friends experienced a decrease in the overall amount or frequency of communication, results showed that decreases in Face-to-face communication did not diminish psychological closeness, whereas changes in frequency of emails had a profound impact. When email
frequency decreased, so did the closeness, but no effects were found for email increases, indicating email communication might only serve to maintain relationships. Shklovski et al. (2008) characterised email as providing a “hygienic” function rather than constituting a proactive or strategic relational maintenance behaviour, in that it requires a threshold level of activity, below which relational maintenance declines. Baose and Wellman (2006) state that email should be favoured in long-distance relationships, especially if the distance is large and the time schedules of the interaction partners differ notably.

2.4.2.2 **IM and Video Sharing**

Studies have been conducted in the use of Instant Messenger (IM), notably Hue et al. (2004). They investigated the degree of intimacy perceived within a friendship group, and showed a positive correlation in IM use and intimacy. Emoticons are a feature of IM promoting self-expression and compensation for lack of Face-to-face contact. Pictures, colours and text combined provide other emotional expression allowing for richer communication exchanges (Tidwell & Walther, 2002). These forms of non-verbal communications go beyond the limitations of pure text environments. In contrast, Walther and D'Addario (2001) conducted a study on the use of emoticons within CMC and found that text had a more positive impact on effective communication.

The maintenance of relationships can also be identified within IM. Nardi et al (2000) carried out an ethnographic study within a working environment, and found that relationship maintenance was a primary use in the working day. However, the relationships maintained were with family and friends rather than co-workers.

Video, such as video conferences can be recognised as analogous to Face-to-face communication. Studies have been conducted in the way that kin utilise the technology. Kirk
et al. (2010) found that individuals felt closer to the remote relation using video rather than alternative CMC technologies. A shared experience of family life is possible when the video link is left open for the remote individual to view at arbitrarily chosen times. A negative aspect is the need to arrange a person-to-person communication; both parties need to be available at the same time (Judge et al., 2011; Ames et al., 2010).

Video conferencing is becoming more widespread and cost effective within an extended family setting. Media richness theory recognises the relevance of multiple cues, found in Face-to-face, such as facial expressions, voice tones and body language, present in video chat. Natural language and common parlance can be present within a video communication, allowing a richer experience for the parties involved (Daft & Lengel 1984). The Social Presence Theory has a relevance within the video context since the participants may have more awareness of the other parties emotions and state of mind (Short et al., 1976). Cao et al. (2010) state asynchronous video offers greater flexibility, and can be useful when the other party is separated over time and distance.

2.4.2.3 Social Networking Sites

SNS sites such as Facebook allow users to display personal information, images and messages. High or low privacy settings can control the visibility of information to a set of users, or allow open access to anyone using the internet. However, users can create an alias identity providing fictional data, which has no resemblance to their own identity. Personal data, photographs and statements can be exaggerated or completely fabricated, with the intention of enhancing one’s character or occupation identity to other users.

Recent years has seen a dramatic increase in the use and presence of Social Networking Sites (SNS), which are "web-based services that allow individuals to (1) construct a public or
semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system” (boyd & Ellison, 2007).

Ellison et al., (2007) note that SNS users do obtain social benefits from participating in these technologies, since SNS enable access to broader and more heterogeneous networks in an accessible manner. Donath and boyd (2004) coined the term “public displays of connection” to suggest that individuals validate their identity by their online social connections in order to serve as evidence of their own social abilities (boyd, 2006).

Researchers suggest SNS, to a large extent, are used for connecting with previously established relationships, rather than forming new relationships (boyd & Ellison, 2007; Ellison et al., 2007). For example Donath & boyd (2004) argue that the function of SNS is primarily in maintaining connections within an extended social network. These sites do not substitute, but augment the array of modalities that people use for relational maintenance. They offer complex systems to maintain relational stability through connections and through unobtrusive relational behaviours (Sigman, 1991), such as leaving comments or notes for each other (boyd & Ellison, 2007). Though many personal relationships are multimodal, the range of modalities used to maintain any relationship is associated with the strength of that relationship and its’ perceived importance (Haythornthwaite, 2005). For strong ties, SNS are likely to provide additional ways of perpetuating relationships, but users also actively engage in seeking out other users on SNSs, with whom they previously had some connection outside the context of the site (Lenhart & Madden, 2007). These connections are former classmates, neighbours from prior residential locations, former co-workers, and weak ties where the friendship had existed for a time, but distance and life changes contributed to these relationships fading. Weak ties tend to rely on fewer modalities for relational
maintenance (Haythornthwaite, 2005); however, SNS may offer a method of interaction for weak or previously lost ties. Although research clearly indicates that SNSs are implicated in relational maintenance, both for strong and weak ties, how and why that happens is still unknown.

Extensive studies on the growth of the Internet as a method of communication and interaction concern privacy issues. These factors become important, particularly when individuals are maintaining a specific degree of intimacy within an online relationship. Boyd (2003) discusses issues of trust and intimacy in online networking; Donath & boyd, (2004) and boyd (2004) focus on participants’ representation of their selves to others. Privacy issues are particularly significant in the context of SNS, where large archives of information about their users are held (Beer & Gane, 2006). The amount and type of information participants freely reveal can vary from a person’s broad interests (Liu & Maes 2005), entertainment interests, or to more personal interests such as political and sexual orientations (Gross & Acquisti, 2005). In addition, photographs and insights into an individual’s social or inner life are often provided (Gross & Acquisti, 2005).

Many SNSs, such as MySpace and Facebook, provide individuals with a choice of who can view their profile. Profiles are used to prevent unauthorised user(s) from accessing individual personal information, and can only be accessed or edited via a log-in and access code identifying the user. However, this feature does not stop misuse, as fake profiles can be created to deceive viewers. Various organisations and government bodies see this as a serious concern, especially in relation to online sexual predators. A 2008 government panel (Internet Safety Technical Task Force, 2008) concluded that technological fixes such as age verification and scans are relatively ineffective means of apprehending online predators. In a study carried out by Liu & Maes (2005) on 4,000 users of Facebook, found individuals were
open and willing to provide large amounts of personal information in an online social network. They also state that participants had little concern about the privacy risks, and only a small number changed the default privacy preferences, which are set to maximize the visibility of user’s profiles. In summary it would appear that privacy issues are considered important in the context of forming and maintaining relationships through SNS. In regards to family and friends privacy would have even less relevance.

2.5 Relational Maintenance over distance

Some academics have argued that face-to-face interaction is key in terms of maintaining relationships, while others suggest phone calls, text messages, CMC or Social Networking Sites (SNS) can also be used to maintain distant relationships (Smoreda & Licoppe, 2000). CMC may liberate interpersonal relationships from the confines of physical locality and create opportunities for new, but genuine, personal relationships and communities (Parks & Floyd, 1996). However, some studies have shown that CMC reduces cues about the physical context. In addition, non-verbal cues, physical qualities, body movements, facial expressions, and appearance are missing (Daft & Lengel, 1986).

According to Sigman (1991), relationships do not need to cease just because relational partners are no longer able to interact. Instead, Sigman (1991) proposed that relational partners have mechanisms to reassure each other that the “conversational void” is temporary. Relationships that survive the initial shock of physical separation can endure for many years (Finchum, 2005; Johnson, 2001). This process has been made easier with long distance mediated communication, affordable to many people (Hoffman et al., 2004). In caution, Kraut (2008) notes the precise role that different communication technologies play in the development and maintenance of social relationships has been difficult to isolate.
Baym et al, (2004) compared interpersonal interactions online, showing that students preferred face-to-face interaction with local relationships, whilst maintaining their distance relationships through the Internet and the telephone. Although the students also used the Internet for close relationships, more intimate exchanges were carried out face-to-face or through telephone calls. In a similar study Chen et al., (2002) found email was used with friends rather than relatives, and was used more with long distant relationships. He also found that the students’ recognised the Internet as the dominant mode in maintaining relationships between friends.

In contrast, Dimmick et al. (2000) found email was the preferred method to maintain distant relationships. He suggested the telephone was inferior for long distant relationships. However, other studies (Cummings et al., 2002; Nie et al., 2002) reported online interactions such as email may be used as a substitute for face-to-face interactions. Cummings et al. (2002) carried out a diary study where students recorded their communication and whether the modality used proved useful in maintaining relationships. The participants preferred face-to-face and telephone interaction for maintaining relationships and found face-to-face and telephone communication were associated with ‘strong’ relationships in comparison to email. These studies not only indicate the significance of the quality of communication but also highlight modality preference.

Distant relationships can be studied within the Diaspora, such studies contain fewer variables, making findings and conclusions easier to determine. Gonzalez (2002) studied Internet use within the Mexican Diaspora, focused on a community based website centred on cultural aspects. In his study, he found that the Mexican Diaspora maintained relationships with people they knew before, and thus had more in common with their network. This result is consistent with similar findings, that people are more likely to
maintain strong and medium-strength relationships formed in the real world (Ellison, Steinfield & Lampe, 2007). Gonzalez (2008) went on to suggest that although Social Networking Sites (SNS), such as Friendster or MySpace, provide some form of communication between displaced people, they do not provide families with the intimacy or privacy present in face-to-face interaction. However, Miller & Slater (2000) have shown that CMC technologies have helped diaspora communities maintain relationships, cultural and religious affiliations, as well as providing support in terms of advice on issues such as work, education, accommodation and social activities.

An ethnographic study conducted by Bernal (2006) on the Eritrean Diaspora use of Dehai.org, reported the effective use of CMC in supporting the Eritrean war with Ethiopia. Users kept up-to-date with developments of the war and were able to express their opinions about the conflict. In addition, Bernal (2006) found, through online discussions, the Eritrean Diaspora felt a sense of belonging, shared experiences and had feelings of familiarity with Eritrean natives (Bernal, 2006). Miller and Slater (2000) found that the Trinidadian Diaspora used CMC to reinforce the nuclear family allowing closer relationships between parents, children and siblings. In addition, CMC also strengthened the sense of identity and belonging towards their culture.

2.6 User Motivation in using CMC

A number of scholars have examined motives that prompt users to go online (Joinson, 2008; Ross et al., 2009; Tinnerman, 2002). Papacharissi and Rubin (2000) constructed a scale to measure why people use the Internet by combining interpersonal communication, media and new technology motives. They identified five reasons for using the Internet: interpersonal utility, passing time, information seeking, convenience, and entertainment. These motives have been correlated to person types, and the level of CMC use. For example, Wolfradt and Doll (2001) found that visiting chat rooms was positively correlated
to interpersonal communication motivation, but negatively correlated to information motivation. Rubin and Rubin (1992) suggested that media and interpersonal motives are associated with each other, and understanding these interpersonal motives will provide insight in the uses of these new technologies.

Previous studies, investigating motivation for using SNS, have shown users are able to gain a greater insight into the material that is being discussed, and a sense of connection to the world over a long period of time. Ellison, et al. & Lamp, et al. (2007) found that college students used Facebook and MySpace to maintain connections with friends (Cha, 2010). Other studies have shown that college students are motivated to use SNS as it provides a connection with family and relatives (Subrahmanyam, et al., 2008). Subrahmanyam et al. (2008) also found that some of the College students’ motivation for having a Facebook account was because all their friends had accounts.

According to Joinson’s (2008) findings, to upkeep “social connections” reflects “relationship formation and reinforcement” motives; the motive to obtain “shared identities” may be the result of the consideration that “all friends had SNS accounts”. Joinson (2008), in reference to Facebook uses the term: gratification, to explain the motivation of students using the medium. Gratification included “social connection, social network surfing and status updating”. Unsurprisingly, ‘keeping in touch’ was cited as the most common reason for using Facebook. This research project is also concerned with subject motivation for using SNS in general, given that Facebook is the dominant medium for online social interaction.
2.7 Conclusion

Dunbars (2008) suggested humans have a hierarchy of social relationships driven by emotional intensity. However, the literature does not discuss how these levels of friendships based on emotional intensity are supported by CMC. The literature is disparate about which CMC technologies are more effective for relational support. Boyd and Ellison (2007) reported that SNS is primarily used to maintain established relationships. In contrast, Resnick (2002) found that CMC could be identified as a tool used to develop new relationships.

There is a lack of information regarding the degree of intimacy within online relationships. Many studies show unequivocally that people can and do form on-line social relationships (e.g., Parks & Floyd, 1995). However, these data do not address the frequency, depth, and impact of on-line relationships compared with traditional ones, or whether the existence of on-line relationships changes traditional relationships, or the balance of people's strong and weak ties. An analysis of the impact of the Internet needs to consider how CMC/SNS may be contributing to maintaining existing and new forms of interaction.

Previous research has shown that the main use of CMC is to support existing relationships. However, it is not clear how effective CMC/SNS can be for supporting existing relationships at a distance. Studies by Gonzalez (2008) have addressed this issue in part. However, Gonzalez studied a community website with a specific purpose. He concluded that SNS was not sufficient for maintaining close tie relationships at a distance. Cummings (2002) attempted to measure the closeness of relationships and stated that the telephone was the predominant modality used to maintain close tie relationships.

Kraut (2002) reported that CMC could be perceived as an extension, providing support for maintaining offline relationships. It is worth noting that Kraut (2008) recognised the
difficulty in isolating the precise role that communication technologies play in the continuation of a social relationship.

The literature indicates the need for further investigations, enabling a better understanding of whether individuals are using CMC to maintain their interpersonal relationships, and whether the type of information exchanged Face-to-face is different (intimate, trivial, advice, general formalities) from information being exchanged via other modalities.
Chapter Three: Methodology

3.1 Introduction

This chapter outlines the theoretical stance that informed the approach adopted in this thesis, and the rationale for adopting a mixed methods approach. A brief overview of the methods used is presented. However, this chapter does not go into depth on the specific methods utilised, as these methods are described in detail in the sub-studies presented in Chapters 4, 5, 6 and 7. The chapter concludes with a section relating to the ethical considerations of the approach adopted in this thesis.

3.2 Research Philosophy

A research philosophy is a belief about the way in which data about a phenomenon should be gathered, analysed and used. Different philosophical positions contain differing assumptions, which can influence our view of the world (Saunders et al., 2009). The epistemological position, which is concerned with the nature of knowledge and how it can be acquired, is considered as one of the core factors that impact on the choice of research methods (Snape & Spencer, 2003). Kumar (2005) identifies two main paradigms that form the basis of research in the social sciences. The paradigm that is rooted in the physical sciences is called the systematic, scientific or positivist approach. The opposite paradigm has come to be known as the qualitative, ethnographic, ecological or naturalistic approach. The research purpose should determine the mode of inquiry and hence the paradigm (Kumar, 2005).

Positivist approaches state that scientific knowledge can only come from positive affirmation of theories through strict scientific method. Positivists believe that reality is separate from the individual who observes it. They consider the subject (the researcher) and object (the
phenomena in the world that they view) to be two separate, independent things. In short, a positivistic ontology is alleged to be dualistic in nature (Weber, 2004).

On the other hand, interpretivists believe that reality and the individual who observes it cannot be separated. Often, they root their arguments in Husserl’s, and also Hegel, notion of life-world, and our perceptions about the world are inextricably bound to a stream of experiences we have had throughout our lives (Linden et al. 2007). The life-world has both subjective and objective characteristics. The subjective characteristics reflect our perceptions about the meaning of some world. The objective characteristics reflect that we constantly negotiate this meaning with others with whom we interact. In other words, it is objective in the sense that it reflects an inter-subjective reality (Weber, 2004). In this research, the results presented are my interpretation of the data acquired through the interviews and diaries.

Epistemology is defined as questioning what we "do know" and "can know" (Allison, 2000). Jankowicz (2004) believes positivism in the epistemology and personal beliefs, hunches, feelings, intuitions and emotions do not count as evidence. In interpretivism the epistemology supports legitimising the value of individual belief and conviction, avoids any search for truth absolute, and instead focuses on a socially agreed understanding. It facilitates the monitoring of factors that could lead to results that are unreliable (Jankowicz, 2004).

The positive paradigm utilises a quantitative approach, whereas the interpretivist paradigm utilises a qualitative approach. Creswell (2009) suggests, each approach is characterised not only by the stance taken, but also by the strategies used to apply the design (Creswell, 2009). In contrast the qualitative approach tends to be associated with the constructivist
(interpretivist) paradigm, which employs strategies such as interviews, diary studies, ethnographic and phenomenographic studies as their preferred research methods (Weber, 2004), resulting in textual data.

Tashakkori and Teddlie (1998) challenged the dominance of a singular method and suggested a mixed methods alternative. This approach uses a mix of quantitative and qualitative methods during data collection within one study, or through several studies within the research (Creswell, 2009). The mixed methods debate lead to the emergence of a third set of beliefs called the Pragmatic paradigm.

Pragmatists argued that a false dichotomy existed between qualitative and quantitative approaches, and researchers should utilise the strengths of both paradigms to provide a more complete understanding of social phenomena. The choice of approach should directly link to the purpose of, and the nature of, the research questions posed, rejecting a forced choice between positivism and interpretivism (Creswell, 2009). Essentially, the pragmatic paradigm offers the researcher intuitive appeal, permission from subjects to study areas that are of interest, embracing methods that are appropriate and using findings in a positive manner, in harmony with the value system held by the researcher (Creswell, 2009). For these reasons it can be argued that the pragmatic paradigm can be adopted for the purpose of this research.

Furthermore, the mixed methods approach uses strategies that involve collecting data in a simultaneous or sequential manner, using both quantitative and qualitative approaches in a way that best addresses the research question or questions (Creswell, 2003). Decisions on whether to take a quantitative, qualitative or mixed method approach should be made on the suitability of the design and methodology of the research, rather than the philosophical commitments (Darlington & Scott, 2002).
3.3 Research Design

Researchers have debated the relative value of qualitative and quantitative inquiry (Patton, 1990). Qualitative research, broadly defined, means “any kind of research that produces findings not arrived at by means of statistical procedures or other means of quantification” (Strauss & Corbin 1990). Quantitative researchers seek causal determination, prediction, and generalisation of findings; in contrast to the qualitative researcher who seeks illumination, understanding, and extrapolation to similar situations.

Conclusive research aims to develop measurements to clearly defined phenomena, while the exploratory research is characterised by using a flexible and evolving approach to investigate the phenomena (Malhotra & Birks, 2007). Thus, the primary rationale of conducting conclusive research is to test specific hypotheses and examine specific relationships. In contrast, the exploratory research purpose is to provide insights and understanding of the nature of a certain phenomenon. In view of the above insight and understanding, an exploratory approach using mixed methods will be adopted for this research. Saunders et al. (2007) state an exploratory study is a valuable means of finding out “what is happening; to seek new insights; to ask questions and to assess phenomena in a new light” (Robson, 2002). An advantage of using an exploratory method is that it is flexible and adaptable to change; for example, as a result of new data appearing and new insights occurring, a change in direction is possible (Saunders, et al., 2007). However, Adams and Schvaneveldt (1991) point out that the flexibility inherent in exploratory research does not mean an absence of direction in the study.

3.3.1 Mixed Method

The methodology that framed the current study was a mixed method design, which incorporates philosophical assumptions and methods of inquiry advocated by Creswell & Clark (2007). A mixed method approach supports a combined quantitative and qualitative
study, allowing a better understanding compared to a singular approach (Creswell & Clark, 2007). In addition, mixed methods allow for both inductive and deductive investigation to take place within the same research. Tashakkori and Teddlie (2003) note that there are three areas where mixed methods are superior to a mono-methods approach. Firstly, is the ability to answer simultaneously confirmatory and exploratory questions. Secondly it provides stronger inferences, through depth and breadth, to complex social phenomena. Thirdly it provides the opportunity, through divergent findings, for an expression of differing viewpoints. Venkatesh et al. (2013) adapted and developed the three areas, suggesting seven reasons for mixed-methods research (Creswell, 2003; Greene et al., 1989; Tashakkori and Teddlie, 2008); namely: complementarity, completeness, development, expansion, corroboration/confirmation, compensation, and diversity (see Table 3.1).

Table 3.1: Purposes of Mixed-methods Research (Source: Adapted from Venkatesh et al., 2013)

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complementarity</td>
<td>Mixed-methods are used in order to gain complementary views about the same phenomena or relationships.</td>
</tr>
<tr>
<td>Completeness</td>
<td>Mixed-methods designs are used to make sure a complete picture of a phenomenon is obtained.</td>
</tr>
<tr>
<td>Developmental</td>
<td>Questions for one strand emerge from the inferences of a previous one (sequential mixed-methods), or one strand provides hypotheses to be tested in the next one.</td>
</tr>
<tr>
<td>Expansion</td>
<td>Mixed-methods are used in order to explain or expand upon the understanding obtained in a previous strand of a study.</td>
</tr>
<tr>
<td>Corroboration/Confirmation</td>
<td>Mixed-methods are used in order to assess the credibility of inferences obtained from one approach (strand).</td>
</tr>
<tr>
<td>Compensation</td>
<td>Mixed-methods enable compensating for the weaknesses of one approach by using the other.</td>
</tr>
<tr>
<td>Diversity</td>
<td>Mixed-methods are used with the hope of obtaining divergent views of the same phenomenon.</td>
</tr>
</tbody>
</table>

Moreover, Howe (2003) states that using mixed methods, which include a diversity of perspectives in social science, leads to less bias and more objective social research. Similarly, Onwuegbuzie and Leech (2004) found the inclusion of qualitative data collection analysis in quantitative interpretation aided the interpretation of significant findings; and that quantitative data collection analysis and interpretation added meaning to qualitative findings.

Bryman (2006) presented motivations for using a mixed-methods research approach (see Table 3-2).
Table 3.2: Motivations for using mixed-method designs (Source: Adapted from Bryman, 2006)

<table>
<thead>
<tr>
<th>Reason</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triangulation</td>
<td>Use of two or more independent sources of data or data collection methods to corroborate research findings within a study</td>
</tr>
<tr>
<td>Facilitation</td>
<td>Use of one data collection method or research strategy to aid research using another data collection method or research strategy within a study</td>
</tr>
<tr>
<td>Complementarity</td>
<td>Use of two or more research strategies in order that different aspects of an investigation can be dovetailed</td>
</tr>
<tr>
<td>Generality</td>
<td>Use of independent source of data to contextualise main study or use quantitative analysis to provide sense of relative importance</td>
</tr>
<tr>
<td>Aid interpretation</td>
<td>Use of qualitative data to help explain relationships between quantitative variables</td>
</tr>
<tr>
<td>Study different aspects</td>
<td>Quantitative to look at macro aspects and qualitative to look at micro aspects</td>
</tr>
<tr>
<td>Solving a puzzle</td>
<td>Use of an alternative data collection method when the initial method reveals unexplainable results or insufficient data</td>
</tr>
</tbody>
</table>

Mixed methods design data may be combined by embedding, merging or connecting data, incorporating both sequential and concurrent data collection. Concurrent designs provide triangulation, as it is possible to see the context from a variety of perspectives. Sequential designs use analysis of one form of data to inform the collection of the second form of data. Several authors have developed typologies of mixed methods research designs (Greene et al., 1989, Steckler, McLeroy, Goodman, Bird, & McCormick, 1992, Creswell et al., 2003). Creswell et al. (2003) developed a system for classifying mixed methods research designs, consisting of six primary types of designs: three sequential (explanatory, exploratory, and trans-formative) and three concurrent (triangulation, nested, and trans-formative). Each varies with respect to its use of an explicit theoretical/advocacy lens approach to implementation (sequential or concurrent data collection procedures). Priority is given to the quantitative and qualitative data (equal or unequal), stage, at which the data are analysed and integrated (separated, transformed, or connected). For the studies within this thesis a sequential explanatory approach is used (see figure 3.1). Quantitative data is collected and analysed, followed by qualitative data. Qualitative data is used primarily to enrich the quantitative data. The data analysis is usually connected, and integration can occur at the data interpretation stage and in the discussion. These designs are particularly useful for explaining relationships and/or study findings, especially when they are unexpected (Creswell et al, 2003).
Key: Figure 3.1:

RQ1: Within the Support and Sympathy clique as defined by the Social Brain Hypothesis (SBH): do intimacy patterns correspond to SBH?

RQ2: How is CMC, and in particular SNS, integrated within the lives of users in maintaining relationships?

RQ3: What are the patterns of CMC use in maintaining different strength relationships, located and co-located?

RQ4: How is CMC utilised for geographically remote intimate & personal relationships

3.3.2 Triangulation

Triangulation is the combination of two or more data sources, investigators, methodological approaches, theoretical perspectives (Denzin, 1970; Kimchi et al., 1991), or analytical methods (Kimchi et al., 1991) within the same study. Denzin and Lincoln (1998) report that
triangulation is the use of multiple methods in order to secure an in-depth understanding of the research phenomenon. They suggest triangulation is not a tool or strategy of validation, but rather an alternative to validation. It is a way to add breadth and vigor to the investigation. Stake (2005) reflected that since no observations or interpretations are perfectly repeatable, triangulation can clarify meaning by identifying different ways to view the case “Triangulation helps to identify different realities” (Stake, 2005).

Using Creswell and Plano Clark’s framework, the purpose of the triangulation design is to obtain different but complementary data on the same topic, where the researcher wishes to directly compare or contrast qualitative findings with quantitative results. The current research project, using notation employed by Creswell and Plano Clark, was a QUAN-QUAL-QUAN-QUAL study; the capital letters indicate that the qualitative and quantitative methods were given equal weight and were both equally important, and the dash sign (-) indicates that the methods occurred sequentially.

The data will be from three sources: professionals, students and a diaspora group, providing the opportunity to establish the reliability of data from one source against the other. The researcher will use multiple types of data (qualitative and quantitative) sequentially to develop a more complete picture. Diverse types of data will be collected and then triangulated from different sources to develop a fuller understanding of the phenomena. For example, the studies will address various aspects of how CMC/SNS are integrated into the lives of users; how CMC/SNS may be contributing to maintaining existing relationships and new forms of interaction. Following figure 3.1, four studies will take place sequentially; chapter 4 uses Dunbar’s (1998) Social Brain Hypothesis as an interpretative lens, to gauge the use of CMC/SNS in relationships of different strengths. Chapter 5 identifies the activities of users’ general CMC use, and in particular their social networking and technology use.
Chapter 6 analyses the number of friends maintained locally and co-locally; the activities carried out on social networking sites and the motivations for using the technology. A feature of this chapter is to consider how geographically remote individuals used CMC to maintain their relationships. Thus, chapter 7 examines CMC users who are UK Diaspora, analysing the patterns of communication, the content and modality used over a period of time and whether significant events changed the pattern.

3.4 Research Methodology

Building on the above discussion, this section covers the research methods employed, and their justification against the research questions. The following data collection methods were used: interviews, questionnaires and a diary. The number of respondents varied depending on the nature of the method applied. The research project implemented questionnaires to provide quantitative data, which provided a wide range of views and allowed for meaningful statistical analysis. This method was chosen to answer RQ 1 and RQ 3, which required a finer grained set of data that allowed identification of patterns and themes. For RQ2, an in-depth study is planned, that allows for free thought, without the restrictions of closed questions. Hence interviews were used to provide qualitative data that potentially allowed gaps to be filled, following the quantitative questionnaire stage. This method would also offer the opportunity for probing and teasing out answers. Finally, for RQ 4, the diary stage will utilise both a qualitative and quantitative approach. Qualitative in completing the diary entries, allowing free format and open opinions to be entered, and quantitative in the analysis. Thus the analysis will allow data collection on content and the nature of communications between Diaspora and their ties; and quantitative in the analysis of frequencies of communication patterns.

Questionnaires and interviews are essential techniques used in social science and technology research [Kuter & Yilmaz, 2001]. Questionnaires and interviews are similar methods as they
both involve asking users a set of questions and recording the answers (Neilsen, 1993). Questionnaires are generally self-completed, not requiring the presence of the researcher. In contrast, interviews require that the interviewer read the question and record the answers provided by the participants. Diary studies will be used to collect data from the diaspora participants about their activities for a specified period of time. Diaries allow for the systematic collection of data about a series of discrete events that unfold over time, or about the psychological states of participants, measured at multiple instances (Newman, 2004).

The results from the questionnaire will provide quantitative data and the opportunity to sample a large population. Interviews and diaries will be used for collecting qualitative data from a small sample of participants. These studies will provide an opportunity to explore and understand the types of relationships individuals have with kin and non-kin, and whether these relationships have strong or weak ties. Moreover, these studies will provide information on whether location has any effect on the types of relationships. In addition the impact of technology on maintaining these relationships in terms of individuals adapting, adopting, their experiences, motivations and problems will be explored.

3.5 Ethics Approval

An ethics application was submitted to Manchester Business School Postgraduate Research Ethics Committee (Ref No: MBSPGR/N466). Informed consent was gained for all components of the research project. Each individual for the interviews and diary studies were provided with an information sheet and consent form relating to the research project. The online survey questionnaire provided an introductory explanation and the opportunity to volunteer to complete the survey. Completion of the survey questionnaire was considered to be informed consent, and participants were advised that they could withdraw at any point until the survey was submitted. Every person involved in the research, when naming friends
and family used initials rather than full names for identification and anonymity. The participants were offered the opportunity to request a copy of the final report on this research project. It was made clear to all individuals that they were free to withdraw at any stage. Confidentiality was also enforced.

3.6 Data Analysis

Within the mixed methods methodology, analytic procedures vary depending on which of the four design types was used. For the triangulation design, Creswell and Plano Clark advised performing a concurrent two-stage data analysis. In the first stage, initial data analysis is done separately for each of the qualitative and quantitative databases. In the current research project, a range of appropriate statistical tests will be used to analyse the quantitative data using both SPSS and Excel.

The qualitative interview data will be analysed and categorized using a thematic approach, discussed in 3.13. One of the methods of merging this data, and the one used in this research project, is comparison through discussion. In this frequently used approach, authors report statistical results and then “follow it up with specific quotes or information about a theme that confirms or disconfirms the quantitative results” (Creswell & Plano Clark, 2007).

3.7 Validity and Reliability

The purpose of validity is to see how well the research project fulfils its intention. Validity can be categorised into an internal part and an external part. Gill and Johnson [1997, p.128-29] offer a number of criteria by which the validity of a chosen research method might be assessed:

1. Internal validity: the degree to which the researcher can be sure that the 'cause' is what actually produces the effect (are the constructs logically related?).
2. External validity: The extent to which the research can be generalised. This can be subdivided into the following:
   a. Population validity. The validity of generalising from the research sample to the population in general.
   b. Ecological validity. The validity of generalising from the social context of the research to other contexts and settings

3. Reliability: the consistency of the results and the degree to which another researcher would be able to replicate the original research

Internal validity depends on whether the observations are caused by the experimental inputs alone and nothing else (Olivier, 2004). Creswell (2011) discussed these problems, and noted that participant’s maturation during the research that might influence the results, as could selection of participants with certain characteristics. Also, participants may withdraw, or become familiar with the outcome and remember responses for later testing.

External validity is fulfilled when the results of the experiment can be generalised and are extendable to be representative of the general population. For example, field experiments, conducted in a realistic setting would increase the external validity of the results, but would reduce the internal validity results because of less control over the influencing variables in the natural setting. The opposite holds true for laboratory experiments, as laboratory conditions are different to those experienced in the “real world”, there is more control of influencing variables. Furthermore, external validity (or generalization) threats arise when incorrect conclusions drawn from the sample data are copied to other settings, samples, or different timed situations. For instance, participants and setting characteristics or the timing of the research limit the generalisation to other people, settings or situations (Creswell,
Creswell (2011) suggests further possible bias in quantitative research, namely: statistical conclusion validity, in which inappropriate statistical tests are used to draw inaccurate conclusions, and construct validity, in which researchers use inappropriate measures of variables.

Creswell and Miller (2000) defined qualitative validity as the determination of whether the research conclusions are accurate from the research participant or the researcher’s reader point of view. External validity (generalisation) in qualitative research concerns the extent to which the research findings have larger import beyond the immediate case study (Yin 2003). The issue of generalisability plays a different role in qualitative research than it does in quantitative research, as qualitative studies are not designed to allow systematic generalisation (Maxwell, 1992). However, according to Yin (2003), a single case is usually poor in terms of generalizability; hence it is better to generalise from multiple case studies.

Validity issues in mixed methods research may relate to sample selection, sample size, following up on contradictory results, bias in the data collection, inadequate procedures, or the use of conflicting research questions (Creswell and Plano Clark, 2011). Scholars have discussed how validity relates to the research design and data collection, to data analysis and to interpretation of findings (Onwuegbuzie and Johnson, 2006; Teddlie and Tashakkori, 2009). For example, Onwuegbuzie and Johnson’s (2006) perspective of mixed methods research validity relates to many phases of the research process, from philosophical assumptions to conclusions drawn from the research.

Creswell and Plano Clark (2011) define validity in mixed methods research as “employing strategies that address potential issues in data collection, data analysis and the interpretations that might compromise the merging or connecting of the quantitative and
qualitative strands of the study and the conclusions drawn from the combination”. Thus, the focus of this research will be on the procedures that might be used in all phases of data collection, data analysis and interpretation of research.

For the studies proposed, reliability and validity were strengthened using the following approaches:

- Following Silvermans (2011), the two survey questionnaires and protocols, used in chapter 4 and 6, was reviewed by an academic with relevant experience, from the University of Manchester. In each case, the questions were piloted with similar attributes to the target group. Questions were modified following recommendations and findings from the pilot, resulting in changing to wording and question structure, avoiding confusion or lack of clarity.

- For the semi structured interviews and diary study used in chapter 5 and 7, pilots were conducted, in order to ensure clarity in the questions, consistency in the responses, and for the diary study ensuring that proforma layout was fully understood. Responses reviewed and changes made to questions and the proforma used in the diary study.

- King & Horrocks (2010) recommend that the quality of analysis should be checked. Following this suggestion, a sample of the findings for Chapter 4 and 7, and the analysis and conclusions were presented to: The Mitchell Centre for Social Network Analysis: 6th UK Social Networks Conference 14th – 16th April 2010. University of Manchester. Sponsored by: School of Social-Science, University of Manchester INSNA, International Network for Social Network Analysis & Morgan Centre for the Study of Relationship and Personal Life. Proximities: Thinking about Relationality. 14-15 September 2011. University of Manchester and positive feedback was received from the academic audience.
Attendees reported that the findings were relevant and raised some interesting questions on CMC and its use. I observed that they were engaged in the session and later put forward probing questions. The audience felt that the focus of chapter 7 was too quantitative and would only produce descriptive results, prohibiting detailed analysis later. Using the recommendation, I re-structured the diary study, supporting a mixed approach inviting both quantitative and qualitative responses.

3.8 Research Process, Data Collection and Data Analysis

This section outlines the data collection and data analysis for the four studies carried within this research project. A survey approach was used in chapter 4 and 6 based on reliable scales and survey instruments from previous studies (Dunbar, 1998; Hill & Dunbar, 2002; Cummings et al., 2002; Kraut et al., 2002)

3.8.1 Questionnaire Design

Questionnaires are usually quick and therefore cost-effective to administer; furthermore, it is possible to gather large volumes of data using questionnaire surveys (Saunders, 2009). The questionnaire is a well-established tool within social science research for acquiring information on participant social characteristics, present and past behaviour, standards of behaviour or attitudes and their beliefs and reasons for action with respect to the topic under investigation (Bulmer, 2004). Good questionnaire design is crucial (Bulmer, 2004; Creswell, 2003; de Vaus, 2002; McGuirk and O’Neill, 2005) in order to generate data conducive to the goals of the research. According to Saunders et al (1997), the validity and reliability of collected data depend on the design of the questions, the structure of the questionnaire, and the diligence of pilot testing. Moreover, McDaniel and Gates (2001), outline the development and design of a questionnaire consisting of the following steps:

1. Survey objectives and constraints,
2. Data collection methods
3. Question response format
4. Question wording
5. Questionnaire flow and layout
6. Evaluation of questionnaire and layout
7. Approval from relevant parties
8. Pilot and revise

The above eight steps proposed by McDaniel and Gates (2001) were used to develop the questionnaire for this research project, which are elaborated on in the following section.

3.8.2 Survey objective and Constraints

The objective of the questionnaire was to investigate the participants’ preferred method of communication they used to maintain different strength relationships ties (Dunbar & Spoors, 1995). Relationships are split using the dichotomy local and distant. The literature review indicated local ties are stronger because of the greater opportunity for face-to-face contact (Baym et al, 2004, Quan-Haase, 2007). In addition, Quan-Haase, (2007) found that distance leads to reduced communication between relations, regardless of the mode used. However, these surveys had a narrow focus using a student population, whilst our research project has a wider perspective, and includes students and employed individuals. Furthermore, the interview data in the previous chapter suggested that distant relations can be maintained at an intimate level using selected CMC, dependent on the social need. Thus, the survey used in chapter 4 and 6 will explore differences in strength of relationship across the distance divide, and the technology used to facilitate this. In addition it offers a greater insight into the use of CMC in maintaining relationships in the wider population.

3.8.3 Data collection methods

The purpose of data collection process is to gather information and opinions about the research from the target participants (Churchill, 2005). A high response rate from the
participants depends on designing the questionnaire to be clearly worded and well laid out. Schindler (2003), Saunders et al. (2009), Sekaran (2003) and Zikmund (2009) highlight different techniques for collecting primary data using a questionnaire, such as postal, telephone, internet, intranet-mediated and delivery and collection questionnaires, meeting face-to-face with participants, and a combination of these techniques. The data for chapter 4 was collected face to face. The data for chapter 6 required a large number of participants and therefore the data was collected using an internet based questionnaire. The questionnaire for chapter 6 was created in ‘Qualtrics’ which is a web based program for creating surveys. A number of reasons persuaded the researcher to choose Qualtrics. Firstly the software has proved reliable and is used extensively by peers within the The University of Manchester. It is free to the students of the University. Using this information I undertook training in Qualtrics (provided by the University). In the early development of this research project, Survey Monkey was considered with Qualtrics. With Survey Monkey, results cannot be downloaded unless a subscription is paid, and technical support was not readily available.

3.9 Survey One - Chapter 4

This research project investigates relationships of different levels of intensity following Dunbar’s Social Brain Hypothesis. Dunbar (1995) suggests humans have a hierarchy of social relationships, based on emotional intensity. This Social Brain Hypothesis (SBH) describes human social networks in terms of size and structure, asserting that individuals have 4 layers of networks dependent on emotional closeness. This study is focused on the two innermost circles. Hence, we are using Dunbar’s theory through an interpretative lens.

Question Wording

The wording on the questionnaire needs careful consideration to ensure the desired responses are valid (Schindler, 2001; Saunders et al., 2009). The questions were reviewed by fellow practitioners to improve the wording and clarity. The questions were kept short.
and simple with the addition of explanation of terms used within the study (see figure 3.2) for further transparency.

**Questionnaire flow and layout**

The questionnaire consisted of 8 questions (see appendix A). Definitions of relationship ties were given for clarity, for example “Close Friend = share gossip, general help and advice”. Question 1 asked respondents to name up to 20 closest friends, using initials for confidentiality. Gender of the ego and alter is requested, in addition to whether the alter was a ‘friend’ or ‘kin’. Relationships would need to be ranked on a scale of 1-10, 10 being the most emotional closest. Question 5 requests the participants SNS usage by offering a multiple choice of popular SNS. Participants are able to provide further CMC technology modes in Question 6. The final two questions ask if the relationship initiated in the real world, again options are provided, and the last question asks the length of the relationship.

**Evaluate of questionnaire and layout**

The questions were reviewed against the research objectives to ensure the desired outcomes would be achieved. The questionnaire was structured in a simple manner and printed on A4 Paper. The only resource required was a pen to input the data, which saved time for both the researcher and participants.

**Approval from relevant parties**

Ethical approval from the university was sought before the questionnaire was administered. Participants signed a consent form and were informed of the ethical approval obtained from the University of Manchester.

**Pilot and revise**

A pilot study was carried out to pre-test potential tasks and to assist in the fine-tuning of the questionnaire. This would help identify and eliminate any potential problems before sending
it out to the intended participants. The results of the pilot study ensured that the study was working well and the desired data were being collected in a satisfactory way.

This allowed data to be collected and reviewed, to ensure the outcomes met the objectives of the questionnaire. It also offered an opportunity to check the average length of time the questionnaire took to complete. The survey was tested with 5 colleagues who were based at the Manchester College to evaluate the validity, readability, accuracy and usability. Feedback was provided via face-to-face discussions before final alterations were made. From the pilot two problems were identified. Time available was limited and the researcher underestimated how long the interviews would last. Consequently the number of questions was reduced or merged, to maintain the requirements of the analysis. Secondly, finding a suitable location was problematic, solved by interviewing in the interviewees home.

The questionnaire was carried out in June 2011 till July 2011. A questionnaire survey completed by 30 participants (egos) in the UK was used to collect their social network (alters) - local and distant. In all cases up to 20 alters were reported by 30 egos, collecting data on gender, kin, location, emotional closeness, years known, contact frequency and technology use (social networking, sites, email etc.). Data was reported on 327 alters, which included alters living abroad.

Participants were recruited by balanced sampling for gender and occupation, so the alter sets did not overlap. The cohort analysis of alters focused on distance and technology factors and on emotional closeness. Ego level analysis used Dunbar’s social brain hypothesis for motivation comparison of different intimacy layers in ego networks. Closeness of the top five alters (support group) was compared with the rest of the sample (sympathy group) and the average for all alters for each ego.
Online questionnaires are becoming increasingly common because they are able to reach a larger number of participants fairly quickly [Preece et al., 2002]. Other advantages include:

- Responses are usually received quickly
- Copying and postage costs are lower than for paper-based surveys
- Data can be transferred to a database immediately for analysis
- The time to analyse the data is reduced
- Errors in the questionnaire design can be corrected easily [Preece et al., 2002].

The main method for locating participants involved sending out emails, initially to the 30 participants who were interviewed for the qualitative aspect of the study. The study sought input from a wider population than the student cohort; therefore an email was sent out on the staff intranet portal of the Manchester College. Individuals were asked within the email to send out the survey link (www.hatana.co.uk) to their friends and family in the hope that this would cause a “snowball” effect. Finally an email was sent, via the postgraduate office, to students at the University of Manchester. The various avenues offered the opportunity to locate more people from the general population, with a wide variety of backgrounds.

**Question response format**

Questions were arranged based on the order of the literature review and derived from the interviews and qualitative analysis within this study. Two categories of scales were used for this study, namely, nominal and ordinal. Nominal scales use classification of subjects into categories. These may include ethnic group, gender and employment status, but are usually mutually exclusive and exhaustive (Cohen et al, 2003). Bentler and Chou (1987) advise that ordinal scales can be reasonably treated as continuous variable as long as it has four or more categories. In an ordinal scale, the numbers assigned indicate the relative positions of
the objects but not the magnitude of differences between them, for example ranking or preference.

The questionnaire consisted of a total of 25 questions, divided up into three sections for clarity and ease of use. The sections are as follows:

- **Section One:** Introductory questions – 1 to 5

  There were Demographics data and preferred modes of communication were requested, and included: F2F, phone, SMS, IM, SNS and Email. Relationship types were included Family (Local) Family (distant) Best Friend/s (local) Best Friend/s (distant) Close Friend/s (local) Close Friend/s (distant) Acquaintance/s (local) Acquaintance/s (distant).

- **Section Two:** Communication - 6 to 13

  The questions in this section allow examination of relationships in more detail. Frequency of communication was requested, which can be measured as at least once a day, several times a week, several times a month, several times a year or finally hardly ever.

- **Section Three:** SNS account holders – 14 to 25

  Which SNS site the participants signed up to, choices were MySpace, Facebook, LinkedIn, Bebo, Orkut or Other. We were interested in the frequency of the account usage, daily, monthly etc; how a relationship through SNS was formed, for example, mutual friends or similar interests. We asked this group for the reasons why they signed up to their chosen SNS, was it to make new friends? Or keep in touch with family, and others.

  We were interested in the various methods of communication within SNS, for example wall posts, pokes, private messages, sharing photos, news feeds,
applications and any other. Questions were included on total number of friends, all friend and then percentage of Best Friend, Close Friend, Kin and Acquaintances requested and how many of these were presented as friends on their chosen SNS site.

**Question Wording**

The wording on the questionnaire needs careful consideration to ensure the desired responses are valid (Schindler, 2001; Saunders et al., 2009). The questions were reviewed by fellow practitioners to improve the wording and clarity. The questions were kept simple, with the addition of explanation of terms used within the study (see figure 3.2) for further transparency.

![Figure 3.2: Online Survey using Qualtrics](image)
**Questionnaire flow and layout**

Demographic details were placed at the start of the questionnaire. The questions that requested information on patterns of general patterns of communication were placed in the second section. These questions related to all those who took part in the survey. However, the third section only require those individuals with social network accounts to participate and therefore are placed towards the end.

**Evaluate of questionnaire and layout**

The questions were reviewed after they were inputted into Qualtrics. Any questions that deemed too long were further reduced. The questions were reviewed against the research objectives to ensure the desired outcomes would be achieved. An image was added for question 5 to ensure participants knew exactly what was requested. Since many of the questions were repeated for relationship type and mode of communication, colours and bold text was used to highlight key terms and distinguish between different questions.

**Approval from relevant parties**

Ethical approval from the university was sought before the questionnaire was uploaded onto the World Wide Web. The ethical approval was placed on the introductory page; the nature of the study and its length explained and the researchers contact details provided in case any questions were raised. The participants then 'clicked' through to the questions if they wished.

**Pilot and revise**

A pilot study was carried out to pre-test potential tasks and to assist in the fine-tuning of the questionnaire. This would help identify and eliminate any potential problems before sending
it out to the intended participants. The result of the pilot study ensured that the study was working well and the desired data being collected in a satisfactory way.

The survey was accessed via email through a link generated by the Qualtrics program. This allowed data to be collected and reviewed to assure the outcomes met the objectives of the questionnaire. It also offered an opportunity to check the average length of time the questionnaire took to complete. The survey was sent to 25 colleagues who were based at the Manchester College or the University of Manchester to evaluate the validity, readability, accuracy and usability. Feedback was provided via email or face-to-face discussions before final alterations were made.

The final survey was created through Qualtrics, however this was linked to a web page (www.hatana.co.uk) which provided an introduction to the study and ensured participants confidentiality. The Questionnaire was online from 1st August 2011 to 1st September 2013, however the bulk of the data was collected by 1st of August 2012, and only 20 more responses were collected from August 2012 to Sept 2013. The questionnaire was left online whilst other studies were analysed.

The questionnaires in this study can be used as a predictor of judgement decisions, regarding friendship ties and association. In addition the studies will use participants in their own natural environment in a real life situation, without any form of manipulation from the researcher. The sample will be selected randomly from a range of active participants, ensuring that unbiased data is collected. To satisfy the external validity it would, of course, be necessary for the results to be repeated and it is possible to repeat this study with ease. Saunders et al. (1997) state that the validity and reliability of collected data depend on the design of the questions, the structure of the questionnaire, and the diligence of pilot testing; the questionnaires were designed with these key points in mind.
3.11 Interview & Diary Study Design

Different types of interviews are used in research (King & Horrocks, 2010), but there are specific reasons for adopting semi-structured interviews within this study. Firstly, the researcher had various themes arising from the first quantitative study that required further exploration. Secondly, some additional questions were required to explore the research questions and objectives. Lastly, semi-structured interviews provide an opportunity to discuss and probe any interesting points that may arise from the initial questions. In addition, semi-structured interviews allow the researcher to understand respondent’s experiences following the interpretive epistemology stance. The method is appropriate here to understand the types of relationships maintained through CMC and how CMC is integrated within the respondent’s lives. Thus, a deeper understanding of patterns and the reasons for why can be elicited.

3.11.1 Interview process

The semi-structure interview allows the participants to elaborate and tell their own story (Flick, 2009). The interview questions are used as a starting point for a discussion rather than an exhaustive list of questions in a strict sequential order (King & Horrocks, 2010). The literature review helped in constructing the interview questions. Silverman’s (2011) recommendations were followed and the questions were reviewed by an academic with prior knowledge. Amendments were made accordingly and piloted to ensure the questions were clear and the data collected was relevant to the research objectives. Although the interview questions were guided by the literature, direct reference to the pre-existing literature was avoided to allow the interviewees to lead the discussion, reducing any bias that could potentially arise.

Participants signed a consent form and gave permission for the interviews to be digitally recorded. Tape recordings are very useful in providing a full detailed description of what the
participants said during the interviews (Walsham, 2006). The recordings were sent to a qualified transcriber, provided by the University of Manchester. This helped in reducing the bias and increased reliability and validity of the study. The interviews took place face-to-face at the respondent’s home or choice of venue. The interviews continued until the researcher had gained sufficient information.

30 interviews were conducted over a period of a month in June 2011. The interview protocol included 28 questions divided up into 3 sections:

**Section one:** Relationships – this section asks participants about their relationships of different strength, and the activities they carried out with them in the real world. This followed on from the quantitative study in chapter 4

**Section two:** Online Relationships and General Technology Use – this section asks participants to report details and activities carried out with their online relationships. It also explores their preferred technology mode in maintaining their relationships and general motivation for using Computer Mediated Communication.

**Section three:** SNS Technology Use – this section asks specifically about social networking sites. Initially users are asked whether they have an SNS account; for a no reply the reasons are discussed and for a yes reply further details are elicited, the activities and security is explored. (See Appendix B)

In general the interviews lasted a maximum of 1 hour and 30 minutes and a minimum of 45 minutes. Data was analysed using a thematic analysis approach which will be presented in the next section.

3.11.2 **Diary Study**

A diary study involves asking a number of people to record their experience related to a particular subject over a period of time. It is a useful tool to help learn about user
behaviour, as it provides a record of thoughts and actions in context. According to a number of scholars (Zimmerman & Wider, 1977; Rieman, 1993; Pedgley, 2007) diary studies are a form of research method concerned with self-logging of activity by participants. Such diaries have become common in computer-supported studies (Palen & Salzman, 2002) and human computer interaction (HCI) research (Newman, 2004) as they are a quick and inexpensive way of obtaining real-world data about user behaviour. Examples vary in the literature, depending upon whether the researchers’ concern is with generating predictions of behaviour (Higgins et al., 1985; Ericsson et al., 1993), or understanding of behaviour (Rieman, 1993; Havens and Schervish, 2001). The complexity of diary formats also vary, from a simple format of having a date, time or free text, through to something more involved such as multiple instances of a questionnaire or being more longitudinal (Pedgley, 2007).

In CMC analysis they are used to gain insights into phenomena, and whilst some have been used to drive theory development (Adler et al., 1998), the use of diaries to obtain definitive facts and figures is rare. In contrast, fewer diary studies of designers or engineers have been undertaken (Ball et al., 1994; Dorst and Hendriks, 2001; Aurisicchio et al., 2003; MacGregor, 2004; Pedgley, 2007). A disadvantage of diary studies is the lack of any methodological and philosophical guidance, both can be often doubtful and uncertain. Some pragmatic advice is given by Rieman (1993) and Corti (1993), but little is said about any deeper design decisions.

The simple statement that ‘we did a diary study’ is not enough; exploration of the design decisions taken is also needed. Crotty (1998) notes that, ‘in a very real sense, every piece of research is unique and calls for a unique methodology (p. 13e14)’. Hence, this diary study was undertaken with an exploratory mind set (Yin, 2003, p. 5e6).
3.11.3 **Diary format and questions**

The diary was designed in Microsoft Word to create custom template. The diary was made as simple as possible to encourage participants to input data. An outline of the definitions of relationship ties was provided, in line with the other studies. The diary requested a record demographic details, structured with specific pre-defined categories; such as the number of contacts made over the course of the month, length of conversations, number of friends and kin, conversation content and whom they were communicating with (Chin, et al., 1992). The participants resided in various locations in the UK, and the diary templates were emailed to participants. A detailed set of instructions were given as well as a number of sample entries (See Appendix C).

**Pilot Study**

The diary template was reviewed by an academic with relevant experience. Following this, the diary was piloted with 2 participants who had the same profile as the intended study participants. On first inspection, the responses contained too little information for a meaningful analysis. For example, more detail was needed on who people contacted, and we had not asked was it a brother, mother or best friend. Respondents made a number of mistakes in completing the questionnaire, resulting in the sequencing and format changed to reduce the possibilities of typing errors and ambiguity.

A pilot study of the interview schedule was conducted with three colleagues from the media department at the Manchester College. This pilot study indicated that the schedule was easy for the participants to understand and that it provided rich answers to the research questions. However, two questions from part 1 of the interview schedule provided similar answers to other questions within the section and therefore seen as duplicates and removed for clarification purposes. This left the interview schedule with 28 questions.
3.12 Data Collection
Following the results of the pilot the questionnaire was issued. Data was collected using a diary over four months from November 2010 to January 2011. Participants were asked to record their patterns of communications, on a daily basis, with their friends and relatives based in Pakistan. These diaries were coded using the open coding method and thematic analysis as with the interviews in chapter 5.

To gain further insight and clarification on the diary entries, follow up interviews of the 10 participants took place using the telephone in February and March 2011. To help identify communication partners, we asked participant’s to identify relatives and friends using initials. The friend relationships were identified using Best friend, Close Friend or Friend.

3.13 Sample
The quantitative sampling used in two of the studies (Chapter 4 & 6) selected participants from the study population. For Chapter 4: 15 female and 15 male, 10 students and 20 employed professional (N=30). For chapter 6 a random selection was chosen from the target population of CMC users. Sample size was selected after considering the purpose and objectives of the research and also the available resources. A large number of participants were required for the study in chapter 6.

For convenience, and considering the time constraint, the qualitative study for chapter 5 (interviews) was conducted using the original sample in chapter 4. For the diary study, a sample was chosen from known individuals that met the criteria for the study: knowledge of CMC and Pashtun diaspora originally from the North West Frontier province of Pakistan.

3.14 Thematic Analysis
Following the collection of the qualitative data a thematic approach was used to analyse the data. This approach is used to concentrate on themes or subjects and patterns, emphasising, pinpointing, examining, and recording patterns from the data (Braun & Clarke, 2006). The interviews were carried out face-to-face, digitally recorded and professionally
transcribed. The diary studies were already in electronic format, and therefore they were ready to be analysed when returned by participants. King and Horrocks (2010) suggests three stages for data exploration:

- **Descriptive coding (first-order categories):** This stage identifies aspects of the transcript data that address the research questions and allocates descriptive codes throughout the transcripts.
- **Interpretive coding (second-order Themes):** Groups together descriptive codes that seem to share some common meaning, and create an interpretive code that captures this.
- **Defining overarching themes (Aggregate Dimensions):** Finally the researcher identifies a number of overarching themes that characterise key concepts in the analysis.

These stages were used to identify a number of themes from the transcripts and diary records. To familiarise the researcher with the participants (interview and diary study) the data was initially explored to identify first order descriptive that addressed the research questions. The interpretive coding identified common patterns in the data. Finally these common patterns were refined to provide the overarching themes of the study and focus the analysis.

The transcripts and diary records were read several times and coded separately on the basis of participant’s phrases or terms (Miles & Huberman, 1994). Glaser and Strauss, 1967 state that saturation exists when the researcher cannot ascertain any more distinct or shared patterns. Thus the process of coding the transcripts and diary records continued until theoretical saturation was achieved. Following the three stages of data exploration: first order, second order themes and aggregate dimensions, an analytical framework was developed on participant’s level of real world socializing and computer mediated communication. The main outcome of the diary records were emergent themes developed.
from communication content; this not only offered explanation, but insight into the cultural dynamics that influenced participants preference of technology used.

King and Horrocks (2010), suggest that it is unnecessary to refer to all the constituent codes within each theme, but to focus on codes that illustrate the theme most associated with the research questions. Furthermore, Braun and Clarke (2006) argue the main aim of compiling the thematic analysis is not merely a descriptive summary of the content, but to build a narrative that informs the reader how the research findings have explicated the issue at hand. Detailed narratives are written on interviewees who offered some interesting insights into their interpersonal relationships and CMC use. Data for the thematic analysis was taken from the transcripts and diary records, and provided exemplary evidence.
3.15 Summary

This chapter discussed the philosophical foundations of the research. The general research approach has been explained with justification for the researchers’ approach of methodology. A mixed method approach was chosen as the research methodology, combining qualitative investigation of experience and quantitative analysis of interaction to explore the research questions of this study (see figure 3.4)

Various data collection approaches were employed, such as online survey, interviews and diary studies. Finally, the chapter discussed the importance of using different strategies to minimise the validity threats in conducting mix methods research and the general ethical issues that assure the participants rights.
In summary, the mixed methods approach used for this research combines both qualitative and quantitative forms. This research uses quantitative data to explore relationships of different levels of intensity following Dunbar’s (1995) Social Brain Hypothesis. In addition, the motivation of individuals using the technology in maintaining relationships is also explored through a quantitative approach. While qualitative is used to elicit individuals’ use of CMC and how they integrated, in particular SNS, within their lives. The qualitative approach is also used to analyse the content from individuals who recorded their patterns of social media modality use and relationship maintenance over distance. Moreover, an explanation of the appropriateness of the mixed methods for this research was discussed.

The triangulation within this research project or greater validity of findings offset the weaknesses of a sole method, providing a complete picture of phenomena, the ability to answer different research questions, enhancing this research’s credibility and improving the usefulness of findings.

Table 3: Summary of methods employed in the research project

<table>
<thead>
<tr>
<th>Mixed-Methods</th>
<th>Chapter 4</th>
<th>Chapter 5</th>
<th>Chapter 6</th>
<th>Chapter 7</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>No. of Participants</strong></td>
<td>30 Egos – 427 Alters Survey</td>
<td>30 Semi Structured Interviews</td>
<td>189 Online Survey</td>
<td>10 Diary Study</td>
</tr>
<tr>
<td><strong>Analysis</strong></td>
<td>Statistical Analysis</td>
<td>Thematic Analysis</td>
<td>Statistical Analysis</td>
<td>Thematic Analysis</td>
</tr>
<tr>
<td><strong>Sampling</strong></td>
<td>Quota</td>
<td>Quota</td>
<td>Self Selection</td>
<td>Quota</td>
</tr>
</tbody>
</table>
Chapter Four: Social Brain Hypothesis (SBH) and use of CMC

4.1 Introduction

This chapter investigates relationships structured according to Dunbar’s (1998) social brain hypothesis. Dunbar (1998) identified levels of intensity, corresponding to a hierarchy of social relationships defined by emotional intensity. The Social Brain Hypothesis (SBH) predicts the size and structure of personal relationship networks, asserting that an individual can maintain up to four layers of relationship ties, where the inner circles define intimate relationships, in contrast to the outer circles, which indicate loose ties, such as acquaintances. This study concerns the two inner most circles and attempts to verify correspondence with Dunbar’s (1998) theory, using quantitative measures. These measures are collected from egocentric perceptions of relationship strengths with alters. A ten point scale is used to rank emotional intensity.

Furthermore we introduce the additional dimension of proximity to investigate if distance affects emotional closeness. Geographical considerations have an importance in any social network study due the recent effects of globalisation and the displacement of native populations. Also, an exploration is carried out into the influence gender may have on relationship maintenance, and how the technology may be used differently for egos/alters.

This study is distinguished in the data source, using a mixed demographic profile, including employed and student participants with an equal gender mix. Also, participants communicate across various distances or proximities local/distant/abroad. We are interested in consistencies with previous work and how gender, proximity and technology influence results in the context of the ranked intimacy. This chapter can be considered as an underpinning study for later work, which introduces the CMC dimension into social network analysis.
In summary, the main considerations of this chapter are: emotional closeness, gender differences, proximity and different uses of technology.

### 4.2 Objectives

The objectives below are based on RQ1 of the research project: Within the Support and Sympathy clique as defined by the Social Brain Hypothesis (SBH): do intimacy patterns correspond to SBH?

To answer the research question, three objectives are defined for this study and listed below. These detailed objectives compare the tiers of relationships ties, and include other variables that may affect emotional closeness, such as gender and proximity. This approach offers a wide coverage in answering RQ1.

1. Compare the emotional closeness of best friends (Best Friend - support group) and the rest (Close Friend - sympathy group) in an attempt to validate Dunbar’s (1998) SBH theory

2. Compare Emotional Closeness for gender and proximity

   - Identify any significant differences; for example, are males emotionally closer to their male or female counterparts?

3. Compare F2F against other modes of communication (CMC) in relationships with differing Emotional Closeness

### 4.3 Research Approach

The thesis uses a mixed method approach outlined in chapter 3. This part of the research project uses a questionnaire to collect data on relationships of different levels of intensity following Dunbar’s Social Brain Hypothesis (1998). Neuman (2006) defines this method as one in which the researcher gathers the data from the participants without manipulating the
situation to suit a particular direction of the research. Quantitative methods are useful in providing statistical evidence to broaden perspectives. These types of empirical studies provide a more or less rigorous statistical analysis, but require a larger population of test users for statistical accuracy.

4.4 Data Collection

There are different techniques for collecting primary data using a questionnaire, such as postal, telephone, internet, intranet-mediated and delivery and collection questionnaires, meeting face-to-face with participants, and a combination of these techniques (Cooper Schindler (2003), Saunders et al. (2009), Sekaran (2000) and Zikmund (2012). Following completion of the questionnaire, the same participants were interviewed for the qualitative study in chapter 5.

The participants were asked to complete a questionnaire, requesting their name (using initials) up to 20 friends (alters); their gender, whether friend or kin, location – located or co-located, emotional closeness from 1 to 10 (10 being the closest), the years known, contact frequency and technology used to maintain that relationship (Dunbar & Spoors, 1995; Buys & Larson, 1979, Nettle, 2007).

We take the top 5 named by the ego’s as members of the support group (Best Friend), and the rest representing the wider sphere of sympathy group members (Close Friend) (Dunbar & Spoors, 1995). We can define the innermost subgroup -“best friends” or intimates: those individuals, from whom one would seek advice, support or help in times of severe emotional or financial distress. Whilst, the remaining alters would be considered close friend (Close Friend) based on the sympathy group “the principal circle of friends, commonly defined as all those whose sudden death would be greatly upsetting” (Buys & Larsen, 1979). Ego level analysis used Dunbar’s social brain hypothesis for motivating comparison of different
intimacy layers in ego networks. The study took place over a period of 4 months between Jan 2011 to April 2011. An empirical approach was used to survey the range of social networks from a sample of 30 participants.

4.4.1 Sample Procedure

Participants were recruited using a convenience sample, balanced for gender and occupation. Sampling techniques provide a range of methods that enable researchers to reduce the amount of data they need to collect by considering only data from a sub-group rather than all possible cases or elements (Saunders, et al., 2009).

Forty two people responded to the request to take part in the study. Respondents included The Manchester College and The Manchester Business School postgraduate class-lists. The Staff portals and Student emails were sent invitations and finally Facebook contacts were asked to send out messages to their lists of friends. A small number of the respondents were known to the researcher but no family members or close tie contacts was included.

However due to time constraints and participants schedules, 30 individuals completed the questionnaire. The questionnaire took between 5 and 15 minutes, depending on how many alters were listed by participants.

4.4.2 Questionnaire Design

Participants were asked to provide the identities of alters that followed closely definitions used in prior studies (Dunbar & Spoors, 1995; Buys & Larson, 1979, Nettle, 2007). After providing background information, participants were asked to list up to 20 people in their network of relationships. For each alter listed, participants were asked how emotionally close they were to each alter on a scale from 1 to 10, with 10 indicating maximum closeness. This measure has been used successfully in previous studies (Hill & Dunbar, 1993; Roberts et al., 2009). Further, they indicated the alter’s gender and whether there was any relation by birth or marriage to the participant. The data collected from the questionnaires included the following:
For each Alter

- gender, age
- kin or friend
- Social Networking Site, Face to Face or both used as the main form of communication
- distant (> 50 miles) or co-located
- years known
- emotional closeness (1..10 scale)
- where met (school, childhood, college, work, other)

The questionnaire was designed to investigate communication methods (SNS or F2F) preferred by the egos participating in the survey. The survey allowed for measuring different strength relationship ties maintained, using a 1-10 ranking, 10 being the closest (Dunbar & Spoors, 1995). From the literature review it was found that local ties are stronger because they allow frequent face to face (F2F) contact (Baym et al, 2004, Quan-Haase, 2007). Furthermore, Quan-Haase, (2007) found that, regardless of CMC used, distance leads to reduced communication between kin relations. This survey extends Quan-Haase’s work to include a more representative sample of the wider population. Using data from the survey, this study investigates the strength of relationships maintained between local and distant ties, and using Dunbar’s terminology, within SNS, distinctions between support and sympathy group can be identified. The focus of this chapter will be SNS use, and interpreting the findings within the context of Dunbar’s SBH.

4.5 Data Analysis

The analysis considered 30 participants (egos), whose relationships (alters) were then split into support and sympathy groups based on the SBH divide to measure emotional closeness: top 5 = support group and the rest, sympathy group. These groups were compared on their
technology use and relationships the participants maintained, both local or distant. Excel and SPSS were used to analyse the data. Mean values were calculated for a range of variables. For example, means for Kin, Best Friend, Close Friend are included. Where appropriate, ANOVA’s were applied to the data to confirm or otherwise relationships, by comparing means, between relationship groups. Proximity is coded at three levels to allow comparisons with previous work (Kraut et al., 1998; Stafford, 2004; Finchum, 2005; Fischer, 2005, Shklovski, Kraut & Cummings, 2008). We investigate how F2F communications differ with SNS, and whether emotional closeness is a key marker in F2F communication. Data on the years the egos had known their friends, defined on the EC scale, was analysed; we used this data to investigate if emotional closeness is related to duration of relationships.

Table 4.1: Chapter hypothesis set

<table>
<thead>
<tr>
<th>Hypothesis (H1)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>Emotional Closeness is higher for Best Friend compared to Close Friend</td>
</tr>
<tr>
<td>H1 (a)</td>
<td>There is no Emotional Closeness difference by proximity</td>
</tr>
<tr>
<td>H1 (b)</td>
<td>There is no EC difference by technology</td>
</tr>
<tr>
<td>H2</td>
<td>Same sex Emotional Closeness is closer than heterosexual Emotional Closeness</td>
</tr>
<tr>
<td>H2 (a)</td>
<td>There is no Emotional Closeness gender difference by proximity</td>
</tr>
<tr>
<td>H2 (b)</td>
<td>There is no Emotional Closeness gender difference by technology</td>
</tr>
<tr>
<td>H3</td>
<td>Years known is longer for Best Friend compared to Close Friend</td>
</tr>
<tr>
<td>H3 (a)</td>
<td>Years known is longer by proximity</td>
</tr>
<tr>
<td>H3 (b)</td>
<td>Years known is longer by technology</td>
</tr>
<tr>
<td>H4</td>
<td>Where ego met alter does not affect Emotional Closeness</td>
</tr>
<tr>
<td>H4 (a)</td>
<td>There is no difference in Emotional Closeness for where met by proximity</td>
</tr>
<tr>
<td>H4 (b)</td>
<td>There is no difference in Emotional Closeness for where met by technology</td>
</tr>
</tbody>
</table>

4.5.1 Demographics

For the survey, egos were asked to record their age (20 – 47). The gender mix was predetermined (15 male – 15 female), to give an equal balance of gender responses. Similarly, occupational status was also selected to maintain a balance: 10 Male employed, 10 Female employed, 5 male students and 5 female students were recruited. 407 alters were recorded in total for all egos, with a mean of 14 alters per ego. The results, are displayed in table 4.2, below.
Table 4.2: Descriptive statistics of entire dataset

<table>
<thead>
<tr>
<th>Variable</th>
<th>Total</th>
<th>Mean</th>
<th>St Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>N. (Ego)</td>
<td>30</td>
<td>15.5</td>
<td>8.8</td>
</tr>
<tr>
<td>N. (Alters)</td>
<td>407</td>
<td>7.9</td>
<td>4.8</td>
</tr>
<tr>
<td>Male Alters</td>
<td>199</td>
<td>6.2</td>
<td>3.9</td>
</tr>
<tr>
<td>Female Alters</td>
<td>208</td>
<td>7.3</td>
<td>4.4</td>
</tr>
<tr>
<td># Of Kin</td>
<td>80</td>
<td>2.7</td>
<td>1.9</td>
</tr>
<tr>
<td># Of Local Alters</td>
<td>197</td>
<td>6.7</td>
<td>3.7</td>
</tr>
<tr>
<td># Of Distant Alters</td>
<td>210</td>
<td>6.8</td>
<td>4.3</td>
</tr>
<tr>
<td>Emotional Closeness (EC)</td>
<td>407</td>
<td>7</td>
<td>1.9</td>
</tr>
<tr>
<td>SNS</td>
<td>407</td>
<td>2.8</td>
<td>2.3</td>
</tr>
<tr>
<td>Years Ego known Alter</td>
<td>407</td>
<td>12.3</td>
<td>10.3</td>
</tr>
</tbody>
</table>

Table 4.3 displays the descriptive statistics comparing Emotional Closeness, measured using the top 5 of the ranked alters (based on inspection of the data) against proximity, measured on three levels: local, distant and abroad. It can be seen that both measures for closeness are higher for local ties, with almost half of all ties local (48%). Considering relationship maintenance, our egos are investing almost 50% of their time in maintaining their local relationships. An explanation can be offered: at local level we can expect the visual cues to be present and more opportunity for F2F interaction.

Support group (Best Friend) (27%) abroad are approximately double the value of the sympathy group (Close Friend) (13%). As expected Close Friend totals are higher across proximities, as these ties are weaker, but more in number, following Dunbar’s (1998) SBH, and require more maintenance compared to Best Friend relations.
Table 4.3: Descriptive comparing Emotional Closeness; measured using the top 5 of the ranked alters

<table>
<thead>
<tr>
<th>PROXIMITY</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotional Closeness</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Local</td>
<td>Distant</td>
<td>Abroad</td>
</tr>
<tr>
<td>Best Friend</td>
<td>72</td>
<td>45%</td>
</tr>
<tr>
<td>Close Friend</td>
<td>125</td>
<td>51%</td>
</tr>
<tr>
<td>Total</td>
<td>197</td>
<td>48%</td>
</tr>
</tbody>
</table>

**H1** Emotional Closeness is higher for Best Friend compared to Close Friend

From the descriptive table (4.4) it is noted that means for Best Friend across all proximities are almost equal in Emotional Closeness. This pattern is repeated for Close Friend- closeness rankings, although the means are lower.

**Table 4.4: means for Best Friend/Close Friend across all proximities**

<table>
<thead>
<tr>
<th>Local</th>
<th>E_C</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local</td>
<td>Best Friend</td>
<td>8.92</td>
<td>0.92</td>
<td>37%</td>
</tr>
<tr>
<td></td>
<td>Close Friend</td>
<td>5.95</td>
<td>1.08</td>
<td>63%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>7.04</td>
<td>1.76</td>
<td>100%</td>
</tr>
<tr>
<td>Distant</td>
<td>Best Friend</td>
<td>8.93</td>
<td>0.85</td>
<td>34%</td>
</tr>
<tr>
<td></td>
<td>Close Friend</td>
<td>5.48</td>
<td>1.20</td>
<td>66%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>6.66</td>
<td>1.98</td>
<td>100%</td>
</tr>
<tr>
<td>Abroad</td>
<td>Best Friend</td>
<td>8.91</td>
<td>0.87</td>
<td>57%</td>
</tr>
<tr>
<td></td>
<td>Close Friend</td>
<td>5.91</td>
<td>1.28</td>
<td>43%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>7.61</td>
<td>1.83</td>
<td>100%</td>
</tr>
<tr>
<td>Total</td>
<td>Best Friend</td>
<td>8.92</td>
<td>0.88</td>
<td>40%</td>
</tr>
<tr>
<td></td>
<td>Close Friend</td>
<td>5.78</td>
<td>1.17</td>
<td>60%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>7.02</td>
<td>1.87</td>
<td>100%</td>
</tr>
</tbody>
</table>

**H1 (a) There is no Emotional Closeness difference by proximity**

We performed a two-way ANOVA using the factors proximity (3) and Group (Best Friend/Close Friend) (2), with Emotional Closeness as the dependent variable.
For proximity, there was no significant main effect. However, there was a significant main effect for group Best Friend/Close Friend, with $F(1, 401) = 734.46$ and $P<0.05$. There was no evidence of interaction between proximity and Best Friend/Close Friend, see figure 4.1. These findings demonstrate that there is a difference in Emotional Closeness between Best Friend and Close Friend relations; however proximity does not affect this closeness.

**H1 (b) There is no Emotional Closeness difference by technology**

To investigate the Best Friend/Close Friend relationships further, a 2-way ANOVA was performed, using Best Friend/Close Friend as a factor, and separating F2F from CMC as a second factor, with EC as the dependent variable. As expected, the main effects of Best Friend/Close Friend were significant, with $F(1,403)=681.59$ and $P<0.05$. The other factor, F2F/CMC was not significant. A marginal interaction was present (0.04), with $F(1,403)=4.18$ and $P<0.05$. The mean value for F2F was 7.49, and for other CMC: 7.27. Mean values are displayed in table 4.5 and Figure 4.2, showing the interaction between the two factors. For Best Friend, high levels of Emotional Closeness are observed equally for CMC and F2F. Close Friend Emotional Closeness values show slight differences in the communication modality used.
A further consideration is whether technology use is affected by proximity, using the same distinctions for technology: F2F v CMC. A 2 way ANOVA was performed: proximity (local, distant, abroad) against technology, with EC the dependent variable. The results for main effects of proximity were significant, F(2, 401)= 5.22 P<0.05 but technology was not significant, and there was no interaction. The descriptive statistics, table 4.6 show the mean values, and also differences are observed in fig 4.3. From figure 4.3, noting F2F is not possible for regular contact, there is some evidence of F2F meetings to maintain closeness. Also, distant is low in both F2F and technology. There are small differences in local for F2F and CMC.
Table 4.6: Descriptive in measuring Emotional Closeness for groups by technology

<table>
<thead>
<tr>
<th>Local /Distant</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CMC</td>
<td>7.08</td>
<td>1.84</td>
</tr>
<tr>
<td>F2F</td>
<td>6.93</td>
<td>1.52</td>
</tr>
<tr>
<td>Total</td>
<td>7.04</td>
<td>1.76</td>
</tr>
<tr>
<td>Distant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CMC</td>
<td>6.64</td>
<td>2.05</td>
</tr>
<tr>
<td>F2F</td>
<td>6.71</td>
<td>1.84</td>
</tr>
<tr>
<td>Total</td>
<td>6.66</td>
<td>1.98</td>
</tr>
<tr>
<td>Abroad</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CMC</td>
<td>7.80</td>
<td>1.83</td>
</tr>
<tr>
<td>F2F</td>
<td>7.32</td>
<td>1.83</td>
</tr>
<tr>
<td>Total</td>
<td>7.61</td>
<td>1.83</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CMC</td>
<td>7.05</td>
<td>1.94</td>
</tr>
<tr>
<td>F2F</td>
<td>6.95</td>
<td>1.71</td>
</tr>
<tr>
<td>Total</td>
<td>7.02</td>
<td>1.87</td>
</tr>
</tbody>
</table>

Figure 4.3: EC for group by Proximity
**H2 Same sex Emotional Closeness is closer than heterosexual Emotional Closeness**

Table 4.4 shows the gender of friends. It can be observed that there is a homophilic bias, i.e. each gender chooses twice the number of friends in the same gender.

<table>
<thead>
<tr>
<th>Gender of Friend</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
</tr>
<tr>
<td>Male</td>
<td>66%</td>
</tr>
<tr>
<td>Female</td>
<td>29%</td>
</tr>
<tr>
<td>Total</td>
<td>47%</td>
</tr>
</tbody>
</table>

A finer grained display is given in table 4.5 distinguishing Best Friend/Close Friend; two 2-way ANOVAs were performed to examine differences between Emotional Closeness: Best Friend and Close Friend, with factors (Gender of Alter, Gender of Ego and Group) with Emotional Closeness as the dependent variable. From the descriptive table (4.5) both genders indicate homophily in the higher numbers recorded for support/sympathy group. However, inspection of the Emotional Closeness for support and sympathy group gives a contrasting view: marginal differences are observed for Emotional Closeness across both female and male alter for the male ego. Females indicate a closer relationship tie to male alters, compared to their female alters for support group and marginally closer to females for sympathy group.
A 2-Way ANOVA was performed to test if the homogeneity observed for both ties above, is repeated for Emotional Closeness as a single group. The factors used in this test are: gender of ego and gender of alter, with Emotional Closeness as the dependent variable.
The ANOVA main effects of gender (ego) and gender (alter) differences were not significant and no interaction was observed. Thus, these results indicate there is no evidence that same sex relationships are closer than heterosexual relationships.

**H2 (a) There is no Emotional Closeness gender differences by proximity**

In considering whether closeness varies by gender in alter relationships and proximity, see table 4.8 for the means, a 2 way ANOVA was performed. It was found that gender main effects were not significant but proximity main effects were significant, with $F(2,401)=6.49$, and $P<0.05$, and there was no evidence of interaction between gender group and proximity, as seen in the plot below. The plot (figure 4.4) also shows that closeness is greatest for alters living abroad, and furthermore, this closeness, for both genders of the ego, is towards the female alters.

<table>
<thead>
<tr>
<th>Gender of Friend</th>
<th>Local/Distant</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>Local</td>
<td>6.81</td>
<td>1.73</td>
</tr>
<tr>
<td></td>
<td>Distant</td>
<td>6.60</td>
<td>1.94</td>
</tr>
<tr>
<td></td>
<td>Abroad</td>
<td>7.43</td>
<td>1.77</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>6.87</td>
<td>1.82</td>
</tr>
<tr>
<td>Female</td>
<td>Local</td>
<td>7.23</td>
<td>1.76</td>
</tr>
<tr>
<td></td>
<td>Distant</td>
<td>6.72</td>
<td>2.02</td>
</tr>
<tr>
<td></td>
<td>Abroad</td>
<td>7.81</td>
<td>1.91</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>7.15</td>
<td>1.91</td>
</tr>
<tr>
<td>Total</td>
<td>Local</td>
<td>7.04</td>
<td>1.76</td>
</tr>
<tr>
<td></td>
<td>Distant</td>
<td>6.66</td>
<td>1.98</td>
</tr>
<tr>
<td></td>
<td>Abroad</td>
<td>7.61</td>
<td>1.83</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>7.02</td>
<td>1.87</td>
</tr>
</tbody>
</table>
H2 (b) There is no Emotional Closeness gender differences by technology

The descriptive statistics are shown in the table 4.7; the mean values are close, when comparing F2F to CMC for both genders.

<table>
<thead>
<tr>
<th>Gender</th>
<th>F2F_CMC</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>CMC</td>
<td>6.91</td>
<td>1.75</td>
</tr>
<tr>
<td></td>
<td>F2F</td>
<td>7.00</td>
<td>1.58</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>6.93</td>
<td>1.70</td>
</tr>
<tr>
<td>Female</td>
<td>CMC</td>
<td>7.22</td>
<td>2.14</td>
</tr>
<tr>
<td></td>
<td>F2F</td>
<td>6.91</td>
<td>1.81</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>7.10</td>
<td>2.02</td>
</tr>
<tr>
<td>Total</td>
<td>CMC</td>
<td>7.05</td>
<td>1.94</td>
</tr>
<tr>
<td></td>
<td>F2F</td>
<td>6.95</td>
<td>1.71</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>7.02</td>
<td>1.87</td>
</tr>
</tbody>
</table>

Emotional closeness may be influenced by technology, and the closeness to male alters may show a different pattern of use in contacts with female alters. A 2-way ANOVA was performed and this showed no main effects for gender and no main effects for SNS use,
also no interaction was present. The raw data showed that Facebook was the dominant technology used for relationship maintenance, with 140 female alters, and 108 male alters. Differences in Best Friend and Close Friend Emotional Closeness by gender were also tested with 2 way ANOVAs. For Best Friend, there were no main effects for gender or technology and no interaction. However, from figure 4.5 of Best Friend EC, subjects are emotionally closer to alters using F2F; whilst males closest ties are maintained using CMC, in particular FB.

![Figure 4.5: Emotional Closeness for group by technology](image)

For Close Friend, the main effects of gender were not significant. Closeness of both genders is maintained primarily by F2F communication, shown in figure 4.6. The main effects of technology were significant, with $F(1, 242)=0.002$, and $P<0.05$. There was no interaction observed.
**H3 Years known is longer for Best Friend compared to Close Friend**

Data collected included the years the ego had known alter. In considering any effects on years known, and identify any distinct differences in proximity and technology, a 2-way ANOVA was performed with years known as the dependent variable, against proximity and technology.

The main effects of proximity were significant, with \( F(2,401)=20.76, \) and \( P<0.05 \). Also, main effects of technology (CMC) were significant, with \( F(1,401)=10.92, \) and \( P<0.05 \), also an interaction was observed \( F(2,401)=7.87, \) \( P<0.05 \). In summary the results, for years known, and the technology used differs for proximity. The descriptive statistics table (4.12) shows the mean years known at each proximity level. Means are higher for abroad, indicating long standing relationships. Whilst local indicates much shorter relationship.
Table 4.8: Descriptive in measuring technology by proximity for the duration of friendship (years known)

<table>
<thead>
<tr>
<th>Dependent Variable: Years Known</th>
<th>Mean</th>
<th>Std. Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Local /Distant/Abroad</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Local</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CMC</td>
<td>9.82</td>
<td>9.33</td>
</tr>
<tr>
<td>F2F</td>
<td>8.81</td>
<td>8.17</td>
</tr>
<tr>
<td>Total</td>
<td>9.53</td>
<td>9.01</td>
</tr>
<tr>
<td><strong>Distant</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CMC</td>
<td>11.25</td>
<td>8.46</td>
</tr>
<tr>
<td>F2F</td>
<td>19.49</td>
<td>12.55</td>
</tr>
<tr>
<td>Total</td>
<td>14.01</td>
<td>10.71</td>
</tr>
<tr>
<td><strong>Abroad</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CMC</td>
<td>15.00</td>
<td>7.80</td>
</tr>
<tr>
<td>F2F</td>
<td>18.48</td>
<td>13.71</td>
</tr>
<tr>
<td>Total</td>
<td>16.42</td>
<td>10.67</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CMC</td>
<td>11.13</td>
<td>8.98</td>
</tr>
<tr>
<td>F2F</td>
<td>14.72</td>
<td>12.25</td>
</tr>
<tr>
<td>Total</td>
<td>12.29</td>
<td>10.28</td>
</tr>
</tbody>
</table>

The figure (4.7) gives a clearer picture of the distinctions, it is noted that the longer the years known the more likely is F2F contact to maintain relationships. F2F is the preferred medium for the long standing distant and abroad relationships. An order is observed from 4.8, in the sequence L<D<A.
H3 (a) Years known is longer by proximity

A 2-way ANOVA was performed, using Emotional Closeness (Best Friend/Close Friend) and Proximity (Local/Distant/Abroad), with years known as the dependent variable. The test was used to understand whether years known was related to proximity, and highlight any differences between Best Friend/Close Friend and Years Known. The main effects of proximity were significant with $F(2,401)=12.54$, and $p<0.05$). Also Emotional Closeness (Best Friend/Close Friend) was significant with $F(1,401)=33.85$ and $p<0.05$. Interestingly, there was no interaction observed and both Best Friend and Close Friend indicate years known highest proximity abroad and lowest for local (figure 4.8).

![Duration of friendship by proximity](image)

Figure 4.8: Years known by group and proximity

H3 (b) Years known is longer by technology

A 2-way ANOVA was performed, using Emotional Closeness (Best Friend/Close Friend) and F2F/CMC, with years known as the dependent variable. The test was used to understand whether years known was related to technology and highlight any differences between Best Friend/Close Friend and years known.
For the factor Best Friend/Close Friend there was a significant main effect, with $F(1, 403) = 51.56$, and $P<0.05$. Also, there was a significant main effect on F2F/CMC with $F(1, 403) = 21.54$ $P<0.05$. Finally, there was no evidence of interaction. Both Best Friend/Close Friend years known mean values are greater for F2F, indicating that face to face communication may be preferable over CMC technology for long standing relationships for support and sympathy groups (figure 4.9). Also, years known for Close Friend are lower than Best Friend.

Table 4.9: Descriptive in measuring technology by duration of friendship (years known)

<table>
<thead>
<tr>
<th>Dependent Variable: Years Known</th>
<th>Best Friend Close Friend</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>%N</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMC</td>
<td>14.6</td>
<td>9.6</td>
<td>75%</td>
<td></td>
</tr>
<tr>
<td>F2F</td>
<td>21.1</td>
<td>14.5</td>
<td>25%</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>16.2</td>
<td>11.4</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>CMC</td>
<td>8.5</td>
<td>7.5</td>
<td>63%</td>
<td></td>
</tr>
<tr>
<td>F2F</td>
<td>11.8</td>
<td>9.9</td>
<td>37%</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>9.7</td>
<td>8.6</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>CMC</td>
<td>11.1</td>
<td>9</td>
<td>68%</td>
<td></td>
</tr>
<tr>
<td>F2F</td>
<td>14.7</td>
<td>12.2</td>
<td>32%</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>12.3</td>
<td>10.3</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

Figure 4.8: Years known by group and technology
H4 Where ego met alter does not affect Emotional Closeness

In addition to years known, ‘where met’ was also included on the questionnaire. Of interest is whether this variable has any relationships with emotional closeness (EC). Table 4.10 below, shows the percentages attributed to where egos met their ties, and the average years known. Childhood relationship ties appear to be the most durable, and a progression is observed: from childhood, school, higher education and work.

Table 4.10: When ties started and years known

<table>
<thead>
<tr>
<th>Means</th>
<th>School</th>
<th>College</th>
<th>University</th>
<th>Work</th>
<th>Childhood</th>
<th>Kin</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Met at</td>
<td>9%</td>
<td>7%</td>
<td>12%</td>
<td>19%</td>
<td>6%</td>
<td>17%</td>
<td>31%</td>
</tr>
<tr>
<td>Average years known</td>
<td>16.77</td>
<td>11.54</td>
<td>10.43</td>
<td>5.93</td>
<td>21.44</td>
<td>24.86</td>
<td>7.04</td>
</tr>
<tr>
<td>ST DEV</td>
<td>9.91</td>
<td>5.98</td>
<td>4.83</td>
<td>6.03</td>
<td>9.39</td>
<td>11.38</td>
<td>4.98</td>
</tr>
</tbody>
</table>

A 2-way ANOVA was performed for factors ‘where met’, and Best Friend/Close Friend, with Emotional Closeness the dependent variable. As previously reported main effects for Best Friend/Close Friend were present, F(1,393)=582.29, p<0.05, and no main effects for ‘where met’. The descriptive table 4.11, show the high mean levels for childhood Emotional Closeness Best Friend ties. Some of these results are predictable; for example, kin Best Friend relationships will obviously feature high in Emotional Closeness; education is also prominent for Best Friend and Close Friend relations. The results indicate that where the parties met, does not determine or influence the strength of the relationship.
Table 4.11: Descriptive in measuring where the ego’s met their alters

<table>
<thead>
<tr>
<th>Best Friend_Close Friend</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependent Variable: Emotional Closeness</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Best Friend</td>
<td></td>
<td></td>
</tr>
<tr>
<td>School</td>
<td>9.00</td>
<td>0.95</td>
</tr>
<tr>
<td>College</td>
<td>8.73</td>
<td>0.79</td>
</tr>
<tr>
<td>University</td>
<td>9.18</td>
<td>0.81</td>
</tr>
<tr>
<td>Work</td>
<td>8.79</td>
<td>0.89</td>
</tr>
<tr>
<td>Childhood</td>
<td>8.79</td>
<td>0.89</td>
</tr>
<tr>
<td>Family</td>
<td>9.10</td>
<td>0.89</td>
</tr>
<tr>
<td>Others</td>
<td>8.71</td>
<td>0.87</td>
</tr>
<tr>
<td>Total</td>
<td>8.92</td>
<td>0.88</td>
</tr>
<tr>
<td>Close Friend</td>
<td></td>
<td></td>
</tr>
<tr>
<td>School</td>
<td>5.39</td>
<td>1.12</td>
</tr>
<tr>
<td>College</td>
<td>6.18</td>
<td>1.51</td>
</tr>
<tr>
<td>University</td>
<td>5.90</td>
<td>1.05</td>
</tr>
<tr>
<td>Work</td>
<td>5.37</td>
<td>1.34</td>
</tr>
<tr>
<td>Childhood</td>
<td>6.00</td>
<td>1.18</td>
</tr>
<tr>
<td>Family</td>
<td>5.83</td>
<td>1.29</td>
</tr>
<tr>
<td>Others</td>
<td>6.00</td>
<td>0.90</td>
</tr>
<tr>
<td>Total</td>
<td>5.78</td>
<td>1.17</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
</tr>
<tr>
<td>School</td>
<td>6.63</td>
<td>2.03</td>
</tr>
<tr>
<td>College</td>
<td>7.18</td>
<td>1.79</td>
</tr>
<tr>
<td>University</td>
<td>7.11</td>
<td>1.86</td>
</tr>
<tr>
<td>Work</td>
<td>6.01</td>
<td>1.85</td>
</tr>
<tr>
<td>Childhood</td>
<td>7.56</td>
<td>1.73</td>
</tr>
<tr>
<td>Family</td>
<td>8.26</td>
<td>1.75</td>
</tr>
<tr>
<td>Others</td>
<td>6.86</td>
<td>1.54</td>
</tr>
<tr>
<td>Total</td>
<td>7.02</td>
<td>1.87</td>
</tr>
</tbody>
</table>

It could be expected that abroad and distant are strongly linked to childhood, kin and school. Further analysis of the results included a 2-way ANOVA, with proximity*(where met ) and Emotional Closeness the dependent variable. Results show main effects for proximity, \(F(2,386)=5.82, p<0.05\); main effects for where met, \(F(6,386)=7.51, p<0.05\). There was no interaction, indicating that proximity is not linked to where met. A strong kin effect is observed in fig 4.9 across all proximities, also childhood and school feature high for abroad.
In the graph (figure 4.10), headings have been arranged in an approximate chronological order. Childhood ties are strong, as are college and university, whilst work ties are weaker.
H4 (a) There is no difference in Emotional Closeness for where met by proximity

A 2-way ANOVA was performed for where met (7 levels) and proximity (3 levels), with Emotional Closeness the dependent variable. There was a main effect for where met with F(6,386)=7.51 and p<0.05. There was a main effect for proximity with F(2,386)=5.82 and p<0.05, and no interaction observed. From figure (4.11), the kin ties closeness measures are the highest for all proximities. Work Emotional Closeness is low for local, and distant but higher for abroad.

![Where met Emotional Closeness and Proximity](image)

Figure 4.11: Emotional closeness by where the ego's met alters by proximity

H4 (b) There is no difference in Emotional Closeness for where met by technology

A 2-way ANOVA was performed for where met (7) and technology (2). There was a main effect for where met with F(6,393)=9.92 and p<0.05. There were no main effects for technology, and no interaction observed. From figure (4.12), the kin ties are the highest for both forms of communication. Work is low for EC in both forms of communication.

In summary, main effects for where met and proximity were observed. Also, from figures (4.12 & 4.13) kin Emotional Closeness measures the highest for both proximity and technology; hence, as expected Emotional Closeness is strongest with kin.
Where met by emotional closeness and technology

Figure 4.13: Emotional closeness by where the ego’s met alters by technology
### 4.6 Summary

<table>
<thead>
<tr>
<th></th>
<th>Factors</th>
<th>DV</th>
<th>Main Effects</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>Group (Best Friend/Close Friend)</td>
<td>EC</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Support&gt;Sympathy</td>
</tr>
<tr>
<td>H1 (a)</td>
<td>Group*Proximity</td>
<td>EC</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Support&gt;Sympathy</td>
</tr>
<tr>
<td>H1 (b)</td>
<td>Group*Technology</td>
<td>EC</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>No differences observed</td>
</tr>
<tr>
<td>H2</td>
<td>Group*Gender: ego/alter</td>
<td>EC</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Same sex relationships are not closer. Homophily observed in some ego/alter relationships</td>
</tr>
<tr>
<td>H2 (a)</td>
<td>Gender*Proximity</td>
<td>EC</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Closeness is greatest for alters living abroad – note the anomaly, proximity is significant, explained by the data is alter gender, lying in the same domain as proximity. However, group against proximity in H1a, lie in separate domains</td>
</tr>
<tr>
<td>H2 (b)</td>
<td>Gender*Technology</td>
<td>EC</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>No differences observed</td>
</tr>
<tr>
<td>H3</td>
<td>Proximity*Technology</td>
<td>YK</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Technology used differs by proximity - greater means for abroad. Longer years known the more likely F2F contact</td>
</tr>
<tr>
<td>H3 (a)</td>
<td>Group*Proximity</td>
<td>YK</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Differences observed for proximity. Years known highest proximity abroad and lowest for local</td>
</tr>
<tr>
<td>H3 (b)</td>
<td>Group*Technology</td>
<td>YK</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Differences observed for technology For F2F - years known higher in both cases Best Friend/Close Friend</td>
</tr>
<tr>
<td>H4</td>
<td>Group*WM</td>
<td>EC</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>No statistical differences in the means on 'where met' - relationships</td>
</tr>
<tr>
<td>H4 (a)</td>
<td>WM*Proximity</td>
<td>EC</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Kin ties high for all proximities. Work Emotional Closeness low for local, and distant but high for abroad</td>
</tr>
<tr>
<td>H4 (b)</td>
<td>WM*Technology</td>
<td>EC</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Kin ties highest. Work is low for Emotional Closeness.</td>
</tr>
</tbody>
</table>

EC = Emotional Closeness, YK = Years Known

In *H1* we hypothesize that emotional closeness is higher for best friend when compared to close friend, and EC is uninfluenced by proximity (H1a) or technology (H1b). In this study we found that the best friend (Best Friend) group means values were consistently higher than the close friend (Close Friend) group (table 4.12), corresponding with Dunbar’s (1995) two most inner layers; support (Best Friend) and sympathy (Close Friend) cliques.
Table 4.12: Showing mean values for emotional closeness

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Best Friend</td>
<td>8.92</td>
</tr>
<tr>
<td>Close Friend</td>
<td>5.78</td>
</tr>
<tr>
<td>Total</td>
<td>7.02</td>
</tr>
</tbody>
</table>

The support group represents the closest intimates, including immediate family members and best friends. While the sympathy group represent reliable close friends on whom one can depend on (Dunbar 1998; Sutcliffe, 2011). The level of intimacy (Emotional Closeness) was not affected by proximity or technology (table 4.13).

Table 4.13: showing mean values for proximity and technology with EC as the dependent variable

<table>
<thead>
<tr>
<th>Dependent Variable - EC</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local (alter)</td>
<td></td>
</tr>
<tr>
<td>CMC</td>
<td>7.08</td>
</tr>
<tr>
<td>F2F</td>
<td>6.93</td>
</tr>
<tr>
<td>Distant (alters)</td>
<td></td>
</tr>
<tr>
<td>CMC</td>
<td>6.64</td>
</tr>
<tr>
<td>F2F</td>
<td>6.71</td>
</tr>
<tr>
<td>Abroad (alters)</td>
<td></td>
</tr>
<tr>
<td>CMC</td>
<td>7.80</td>
</tr>
<tr>
<td>F2F</td>
<td>7.32</td>
</tr>
</tbody>
</table>

Table (4.13) shows a slightly higher mean values for abroad with respect to CMC (7.80) and F2F (7.32), which indicate emotional closeness is high with relationships abroad, with no preference for the type of communication. This would seem to point to kin ties, consistent with the Selective Investment Theory (SIT), that we tend to favour close kin as targets of our pro-social behaviour (Brown & Brown, 2006). Further, kin relationships are more stable and less prone to decay, while friendship require more frequent contact to sustain and are more prone to decay (Walther, 1992). Kin on the other hand is emotionally close even though they may not see each other F2F frequently, and need less active maintenance (Roberts & Dunbar, 2010).
Female egos had a greater number of female alters (Parker & de Vries, 1993), but we found no evidence that same sex friendships were more or less closer than cross-sex friendships or vice versa. Some studies suggest the level of intimacy differs depending on whether the relationship is cross-sex or same sex friendship (Darius et al., 2004). From this survey, results differ (table 4.14).

Table 4.14: showing mean values for gender with Emotional Closeness as the dependent variable

<table>
<thead>
<tr>
<th>Gender</th>
<th>Male (ego)</th>
<th>Female (ego)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male (ego)</td>
<td>Male (alter) Best Friend: 8.85</td>
<td>Female (alter) Best Friend: 8.80</td>
</tr>
<tr>
<td></td>
<td>Male (alter) Close Friend: 5.93</td>
<td>Female (alter) Close Friend: 5.76</td>
</tr>
<tr>
<td></td>
<td>Male (alter) Total: 6.85</td>
<td>Female (alter) Total: 7.10</td>
</tr>
<tr>
<td>Female (ego)</td>
<td>Male (alter) Best Friend: 9.12</td>
<td>Female (alter) Best Friend: 8.94</td>
</tr>
<tr>
<td></td>
<td>Male (alter) Close Friend: 5.37</td>
<td>Female (alter) Close Friend: 5.78</td>
</tr>
<tr>
<td></td>
<td>Male (alter) Total: 6.93</td>
<td>Female (alter) Total: 7.45</td>
</tr>
</tbody>
</table>

However, there was a small bias (both genders) of Emotional Closeness towards female alters residing abroad, which could be attributed to kin relations living abroad.
When technology was tested with gender, there was no significant difference (4.16) but a marginally higher Emotional Closeness mean for CMC for male-to-male interaction was observed.

We hypothesized that the years known is longer for Best Friend relationships, when compared to Close Friend relations and the finding provide support. In regard to both proximity and technology, Emotional Closeness was closest for Best Friend. The results showed significant differences for proximity (4.17). Also, the results showed significant differences for technology (4.18).
Table 4.1: showing mean values for technology with years known as the dependent variable

<table>
<thead>
<tr>
<th>Dependent Variable: Years Known</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Best Friend</td>
<td></td>
</tr>
<tr>
<td>CMC</td>
<td>14.6</td>
</tr>
<tr>
<td>F2F</td>
<td>21.1</td>
</tr>
<tr>
<td>Close Friend</td>
<td></td>
</tr>
<tr>
<td>CMC</td>
<td>8.5</td>
</tr>
<tr>
<td>F2F</td>
<td>11.8</td>
</tr>
</tbody>
</table>

In H4 we hypothesised that where the ego met the alter will affect the emotional closeness of the relationships. Significance was found for proximity but not for technology.

The results appear ordinary and predictable, albeit the study focused on CMC. The findings indicate that the levels of intimacy are greater for the closest ties; friendships maintenance requires regular contact; individuals have known their closest ties longest. These findings could be predicted if we considered offline relationships, where face-to-face encounters were feasible. Perhaps the only anomaly and possible clue that the study is within CMC is that the levels of intimacy are not affected by proximity. The data results from this chapter and implications will be discussed in further detail in Chapter 8.
Chapter Five: Relationship Maintenance using CMC

5.1 Introduction
This chapter presents the second of four empirical investigations conducted within this thesis. As a complement to the social network questionnaire presented in the previous chapter, this exploratory investigation involves interviews with 30 individuals; 20 adults in full time employment and 10 undergraduate students. The first section explains the study objectives and outlines the research approach. Following this, a selection of the interviewees is briefly introduced. Various highlights of the interviews are analysed, and the implications of these insights are discussed. A summary of the investigation’s findings concludes the chapter.

5.2 Objectives
To answer RQ2: How is CMC, and in particular SNS, integrated within the lives of users in maintaining relationships? and RQ3: What are the patterns of CMC use in maintaining different strength relationships, located and co-located? Two objectives are defined for this study and listed below. These detailed objectives will offer the opportunity to elicit insightful information about the respondent’s relationships and how CMC is integrated into the lives of users:

1. The first objective is to explore how the participants’ network of different strength relationships are maintained in the real world and through CMC, offering an insight into whether CMC can substitute for real world relationships. The strength of the relationships is measured using Dunbar & Spoors (1995) Social Brain Hypothesis (SBH) as an interpretive lens, and focuses on the two inner, most intimate layers of the network: support clique and sympathy group. The SBH is a measure of strong social ties, rather than weaker ties, and thus useful in determining the close social
network. Furthermore; the study will also take into account connections with a wider network of individuals that are relevant to the participant’s relationships.

2. The second objective is to gain an insight into how CMC is integrated into the participants’ lives, with a particular emphasis on social networking sites. This will elucidate activities participants are engaging in; their reasons for them and the type of relationships they have. The diverse backgrounds (personal, cultural and business) may also provide important information on the dynamics of the types of relationships maintained through CMC and whether this differs from real world connections.

5.3 Research approach

Qualitative research is interested in exploring how and why things happen in an eternally dynamic world (Jensen, 2008). In other words, it offers the opportunity for the researcher to investigate how people experience their lives, within their own contexts, and it seeks to do so by using the participants own words and understandings (Corbin & Strauss, 2008). Furthermore, qualitative methods allow the researcher to achieve a richer understanding of a specific situation (Hancock, 2002), and this can be done through the participant’s feelings, emotions, opinions, and subjective understandings (Silverman, 2005). Thus, a qualitative research design is ideally suited to investigating experiences and opinions and therefore it was the most appropriate approach suited to the aims of this study.

5.4 Sampling procedure

The participants were purposefully sampled in order to fulfil certain requirements. Firstly, to have a set of participants who were: (1) in employment and (2) in education at undergraduate level. Second, that they had or used CMC frequently; had good knowledge of CMC use. The composition of the group was due to the exploratory nature of the study and the desire to investigate patterns of CMC use and types of relationships maintained from a wide community of people. 42 people responded to the request to be interviewed, which
was sent out via The Manchester College staff email portal, The University of Manchester’s postgraduate student email listing and Facebook. In identifying the sample, and avoiding introducing bias, the researcher barred family members and close friends from participating in the interviews.

However, only 30 interviews were conducted as "theoretical saturation" (Flick, 2002) had been achieved at this number. Data gathering took the form of face-to face semi-structured interviews, conducted wherever the participants felt comfortable; home, work or university. In this analysis the names of the participants have been replaced with pseudonyms to protect the participant’s right to privacy and anonymity. In addition, where the participants refer to friends or family these names have also been either changed or only initials used.

5.5 Data Collection

Due to the exploratory nature of this study, there was a need to collect as much insightful data as possible in order to be able to accomplish a deeper understanding of the participant’s social relationships and use of CMC/SNS.

5.5.1 Demographic profile

From the total of 30 participants interviewed: 10 female employed (F-EM), 10 male employed (M-EM), 5 female students (F-SD) and 5 male students (M-SD), age range 20 to 50+. A variety of occupations were recorded, ranging from a carpenter to an IT consultant, all in an age range 20-39.

The semi-structured approach was chosen for this study because it allowed the participants to freely offer and expand on their opinions or issues they felt important; whilst allowing the researcher to direct the discussion to cover the issues that had been raised by the literature review (O’Leary, 2004).
5.5.2 **The Interview Schedule**

At the start of the interview, several elements of demographic data were collected from the participants. They were asked to record their age, gender, nationality and occupation.

The literature review informed the development of the interview guide (Dunbar & Spoors, 1995; Cummings, Butler & Kraut, 2002; Cummings, Lee, & Kraut, 2006; Ellison, Steinfeld & Lamp, 2007; Roberts, Wilson, Fedurek, Dunbar, 2007; Roberts, Dunbar, Pollet, & Kuppens, 2009) which addressed several key themes (privacy, why and how people use SNS, social activities, topics of communication via social media, motivation, active/passive use, social strategies in how people use CMC in relationships and social awareness). Questions were formulated based on gaps identified in the literature and the objectives in 5.2. For example, from the literature, questions were raised on whether virtual friendships can be considered equivalent to physical friendships; questions were also structured on how CMC is used in the lives of participants. For example, motivation and social activities were questions of interest.

The interview schedule included 30 questions divided into three sections:

- **Part 1: Relationships** (10 questions)
- **Part 2: Online Relationships & General technology use** (6 questions)
- **Part 3: SNS technology use** (14 questions)

5.5.3 **Part 1: Relationship Maintenance**

The purpose of Part 1 was to understand the participants’ general social network and the types of relationships they maintained. Prior to the interviews the participants were asked to complete a questionnaire, asking them to name (using initials) up to 20 friends (alters); and provide the following information about them:

- Gender
- Friend or kin
- Location – whether located or co-located
- The years known to them
• Their contact frequency
• The technology used to maintain that relationship

They were also asked to rank the emotional closeness of these friends from 1 to 10 (10 being the closest). From this list of alters, a friend ranking ‘10’ and a friend ranking ‘7’ on the emotional closeness scale (using only their initials) was selected for use within the interview. The alter ranking ‘10’ on emotional closeness is interpreted as best friend (Best Friend) based on Dunbar & Spoors (1995) innermost subgroup “best friends” or intimates: those individuals from whom one would seek advice, support or help in times of severe emotional or financial distress.” Whilst an alter ranking 7 is considered as a close friend (Close Friend) based on the sympathy group who are “the principal circle of friends, commonly defined as those whose sudden death would be greatly upsetting” (Buys & Larsen, 1979).

5.5.4 Part 2: Online Social Relationships and General Technology use

The purpose of the second part of the interview was to investigate the types of online relationships maintained and the CMC technology used to facilitate this. Initially, general questions were asked about social interaction with the participants network, and whether CMC supported this (Harman, et al., 2005; Kraut, et al., 2002). In addition, they were asked which CMC technology they used to maintain their relationships and what technology they would use to receive support from Best Friend, Close Friend and Kin (Wellman, 2001; Haythornthwaite, 2000)

5.5.5 Part 3: Social Network Sites and relational maintenance

The participants were asked introductory questions about whether they had a social network (SN) account, how long they had the account for, and how often they logged onto the account. Those who did not participate in SNS were asked why they decided not have a SNS account (Haythornthwaite & Wellman 2001; Ellison, Steinfeld & Lamp, 2007).
5.6 Data Analysis

The first stage of the analysis process comprised of transcribing high quality MP3 audio recordings. The audio files were sent to a professional transcription company that transcribed the audio verbatim. This was deemed the most efficient and accurate way of retrieving the data from the 30 interviews. These transcripts were then coded using the open coding method, which allows the researcher to code directly from the text itself. This approach was the best approach for this study due to the fact that it creates codes that are specific to the responses received, and thus achieve a close binding to the particular context of the participants (Bohm, 2004). Only codes that occurred repeatedly were deemed to be most representative of the participant’s experiences, which became the basis for the themes. Following the coding, analysis started, whilst adhering to guidelines specified for thematic analysis (King & Harrocks, 2010). Thematic analysis is used as a means of describing a text and as a way of investigating the underlying processes behind responses (Silverman, 2005).

5.6.1 Thematic Analysis

Thematic analysis was used for this study; firstly, to describe the trends in the text, and secondly to articulate those trends into a rich description of the participant’s network and CMC use. Initially, the codes from the transcripts were clustered together for the thematic analysis; for example, participant’s remarks which shared a common thread were collated. This allowed the researcher to explore the similarities between the words and determine the commonalities. These commonalities became the themes for the study (Hancock, 2002). However, it is important to point out that these themes do not remain static but evolve as the researcher develops a deeper understanding of them, and as alternate interpretations arise. In other words the process of analysing themes is dynamic and these will be redefined and reclassified as the investigation of the underlying experiences are uncovered (Silverman, 2006). Thematic analysis not only offers a deeper understanding of the common threads
between the participant’s experiences, it also offers the researcher some explanation of where the responses come from and what is affecting them (Silverman, 2006).

### 5.6.2 Themes

Initially, the participants were asked about their current network of relationships, in particular the Best Friend, Close Friend and kin relationships (see appendix for full list of questions). The frequency in which they communicated was also requested. The participants were finally asked about the method in which they used to communicate i.e. phone, CMC or F2F with their network of relationships.

The themes that arose from the transcript also revealed the participant’s perceptions of what constitutes a best friend or close friend. For example, the participants would use the words ‘support’ or ‘intimacy’ when speaking about their best friends. Similarly, words such as ‘advice’ or ‘gossip’ would be used with close friends. To illustrate this, the figure below (figure 5.1) delineates the type of expressions used when the participants spoke about their relationships with regards to Best Friend and Close Friend (this categorisation also offers consistency with Dunbar & Spoors (1995) definition of network alters, used within this study).

The themes that arose (figure 5.1) regarding relationships suggest that the participants generally viewed Best Friend as supportive intimate relationships as well as long standing. These relationships were maintained mainly through the phone, and at some point F2F contact was inevitable. The Close Friend relationships seemed to require more maintenance in terms of frequency of contact. This layer of friendships tended to be with fellow employees, or people they had shared interest with. Kin were either in the Best Friend layer or not listed at all, and this type of relationship was viewed differently by all participants.
“I rely on my best friends for emotional support and psychological support”
“When I need a shoulder to cry on, I call my best friend, she is always there”
“If I have a work crisis or a family problem, then yes, my best mate would definitely know about it”
“We talk about everything, I know everything about them and they know everything about me”
“My best friend knows my inner most secrets; I trust them with my life”
“I know, I can trust my best friend with anything, if I ran out of money then I know I could rely on them to help me out”

“ We talk about all sorts, what’s going on with other people we know and what’s happening in life”
“I get my close friends to help organise events or even help me with uni stuff”
“We play squash together every week and go for a drink after; we talk about our week, listen to and give each other advice”
“The difference between my best friend and my close friend is that my best friend knows everything about me, if I don’t see them for a while, we just start were we left off, like family, you love them. Close friend, well you share stuff with them and miss them when they are not around, but there

“RB and I meet in pub and have a laugh about general stuff, we don’t get to personal”
“I would say acquaintances are probably those people you say hi and bye too, they don’t know much about you. But you might ask for information about something you missed at work, or have a quick joke with. I have a few of those at work”
“Generally people at university who I don’t hang around with, you know to ask about what you’ve missed in class, say hi but that’s about it”
“I have a load of people on FB that I hardly know. I can’t even remember where I met them”

Figure 5.1: Excerpts from transcripts illustrating topics associated with the level of friendships
Furthermore, with a closer inspection of the transcripts sub-themes it became apparent that participant’s view of what constitutes a Best Friend or Close Friend was also quite different. For example, the quality or depth of the relationship differed depending on the participants’ social awareness/skills or even personal circumstances such as disability, culture or work environment (table 5.1).

Table 5.1: Participants general information, level of socialising and CMC use

<table>
<thead>
<tr>
<th>Participant s</th>
<th>Pseudo Name</th>
<th>Male/Female</th>
<th>General</th>
<th>Socialiser</th>
<th>CMC use</th>
<th>Social skills</th>
<th>Disability</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>William</td>
<td>Male</td>
<td>UK resident Single Student</td>
<td>High</td>
<td>High</td>
<td>Good</td>
<td>None</td>
</tr>
<tr>
<td>2</td>
<td>Kate</td>
<td>Female</td>
<td>UK resident Married Employed (teacher)</td>
<td>Low</td>
<td>Low</td>
<td>Poor</td>
<td>Ill health</td>
</tr>
<tr>
<td>3</td>
<td>Tom</td>
<td>Male</td>
<td>UK resident Single Student</td>
<td>High</td>
<td>High</td>
<td>Good</td>
<td>None</td>
</tr>
<tr>
<td>4</td>
<td>Curtis</td>
<td>Male</td>
<td>UK resident Single Student</td>
<td>Low</td>
<td>High</td>
<td>Average</td>
<td>Autistic</td>
</tr>
<tr>
<td>5</td>
<td>Emily</td>
<td>Female</td>
<td>UK resident Single Employed (teacher)</td>
<td>Low</td>
<td>Low</td>
<td>Good</td>
<td>None</td>
</tr>
<tr>
<td>6</td>
<td>Simon</td>
<td>Male</td>
<td>UK resident Married Employed (manager)</td>
<td>Low</td>
<td>Low</td>
<td>Good</td>
<td>None</td>
</tr>
<tr>
<td>7</td>
<td>Carl</td>
<td>Male</td>
<td>UK resident Married Employed (photographer)</td>
<td>Low</td>
<td>High</td>
<td>Good</td>
<td>None</td>
</tr>
<tr>
<td>8</td>
<td>Francesca</td>
<td>Female</td>
<td>UK resident Single Employed (Civil servant)</td>
<td>High</td>
<td>Low</td>
<td>Good</td>
<td>None</td>
</tr>
<tr>
<td>Participants</td>
<td>Pseudo Name</td>
<td>Male/Female</td>
<td>General</td>
<td>Socialiser</td>
<td>CMC use</td>
<td>Social skills</td>
<td>Disability</td>
</tr>
<tr>
<td>--------------</td>
<td>-------------</td>
<td>------------</td>
<td>----------------------------------</td>
<td>------------</td>
<td>---------</td>
<td>---------------</td>
<td>------------</td>
</tr>
<tr>
<td>9</td>
<td>Sean</td>
<td>Male</td>
<td>UK resident Single Student</td>
<td>Low</td>
<td>High</td>
<td>Poor</td>
<td>physical</td>
</tr>
<tr>
<td>10</td>
<td>Amina</td>
<td>Female</td>
<td>Lived in UK 15 years Married</td>
<td>Low</td>
<td>Low</td>
<td>Good</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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<td>Male</td>
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<td>High</td>
<td>Good</td>
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<tr>
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<td>24</td>
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<td>Female</td>
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<td>Low</td>
<td>Good</td>
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</tr>
<tr>
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<td>(theatre)</td>
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</tbody>
</table>
25  Samuel     Male   UK resident  Married  Self Employed (IT consultant)  Low  High  Good  None

26  Robert     Male   UK resident  Single  Employed (teacher)  Low  High  Poor  Ill health

<table>
<thead>
<tr>
<th>Participants</th>
<th>Pseudo Name</th>
<th>Male/Female</th>
<th>General</th>
<th>Socialiser</th>
<th>CMC use</th>
<th>Social skills</th>
<th>Disability</th>
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<td>Female</td>
<td>UK resident  Single  Student</td>
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<tr>
<td>28</td>
<td>Mariana</td>
<td>Female</td>
<td>Lived in UK  5 years  Single  Student</td>
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<td>High</td>
<td>Good</td>
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<tr>
<td>29</td>
<td>Barbara</td>
<td>Female</td>
<td>UK resident  Divorced  Retired</td>
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<td>Good</td>
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<td>30</td>
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<td>UK resident  Married  Student</td>
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<td>Low</td>
<td>Good</td>
<td>None</td>
</tr>
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</table>

5.7 Relationships

Table 5.2 revealed that participants also had differences in their use of CMC and level of social interaction (real world). In order to understand this difference and investigate any emerging patterns, table 1 data was further divided into a matrix of four categories:

- High Socialising – High CMC
- High Socialising – Low CMC
- Low Socialising – High CMC
- Low socialising – Low Socialising, shown in table 2.
Table 5.2: Four categories of CMC use and level of social interaction

<table>
<thead>
<tr>
<th>Socialising</th>
<th>CMC use</th>
<th></th>
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<tbody>
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<td>High</td>
<td>High Socialising and High CMC use</td>
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<td></td>
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<td>1. William (single, student)</td>
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<tr>
<td></td>
<td>2. Tom (single, student)</td>
<td>2. Ashraf (married, employed)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Abdullah (single, student)</td>
<td>3. Francesca (single, employed)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Lindsey (single, student)</td>
<td>4. Khadija (single, employed)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. Charlotte (Terry's wife)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>6. Tracy (single, employed)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>7. Mark (single, student)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>8. Rita (single, student)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>9. Curtis (single, student)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10. Mikael (single, employed)</td>
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<td></td>
</tr>
<tr>
<td>Low</td>
<td>1. Carl (married, employed)</td>
<td>1. Kate (married, employed)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Frank (married, employed)</td>
<td>2. Emily (single, employed)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Dale (married, employed)</td>
<td>3. Simon (married, employed)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Samuel (married, employed)</td>
<td>4. Amina (married, employed)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. Mariana (single, student)</td>
<td>5. Karen (married, employed)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6. Sean (single, student)</td>
<td>6. Barbara (divorced, retired)</td>
<td></td>
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<tr>
<td></td>
<td>7. Robert (single, employed)</td>
<td>7. Norah (married, student)</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>8. Terry (charlottes husband,)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(employed)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>9. Sarah (married, employed)</td>
<td></td>
</tr>
<tr>
<td></td>
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</tr>
<tr>
<td>Low</td>
<td>1. Carl (married, employed)</td>
<td>1. Kate (married, employed)</td>
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</tr>
<tr>
<td></td>
<td>2. Frank (married, employed)</td>
<td>2. Emily (single, employed)</td>
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<td>4. Samuel (married, employed)</td>
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<td>5. Mariana (single, student)</td>
<td>5. Karen (married, employed)</td>
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<td></td>
<td>6. Sean (single, student)</td>
<td>6. Barbara (divorced, retired)</td>
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<td>7. Robert (single, employed)</td>
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<td>8. Terry (charlottes husband,)</td>
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</tr>
<tr>
<td></td>
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<td>9. Sarah (married, employed)</td>
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</tbody>
</table>

5.8 High Socialising and High CMC use

The participants in the high socialising - high CMC category were predominantly students who generally expressed high levels of socialising due to university life, spending time with friends at University and attending functions. The use of CMC was related to the level of socialising, in that they used FB with friends to share similar stories, upload photographs or update their status. The participants did not, however, use it exclusively to maintain any particular relationship. The transcripts for William, Tom, Abdullah, Lindsey, Rita and Mark reveal that they did maintain Best Friend relations through CMC, but this was not the exclusive means; they predominantly used the phone and text message to communicate and maintain Best Friend. In addition, Best Friend relations for these participants included people that lived in their permanent residents (co-located). Close Friend and Kin relations were maintained through the phone and F2F, and communication was carried out through FB, but usually the content of the communication was impersonal.

Mark and Curtis stood out as anomalies from the other students in terms of their motivations and use of CMC. Mark had thousands of contacts on his SNS accounts, yet
hardly interacted with many of them; he used it to promote his band. Whilst Curtis (who had autism) used CMC to upload video clips of him commentating at boxing matches. Tracy and Mikael were also anomalies within this category; they were employed and were both high socialisers and high CMC users. Tracy uses CMC to increase her network of relationships, and views some of her online relationship on the same level of emotional intensity as with those offline. Whilst, Mikael felt strongly about the use of FB and protested against having an account, yet his use of linkedIn and twitter were exceptionally high. To further understand these anomalies it would be worthwhile elaborating on their experiences in the following narratives.

5.8.1 Mark

Mark is 21 and in his third year of a journalism degree at Salford University, originally from Birmingham. I initially asked Mark how he maintained his Best Friend and Close Friend relations. He stated that he used MSN with his two Best Friends who lived in his hometown of Birmingham; he used this form of CMC frequently. When asked why he used MSN rather than any other form of CMC, he stated that it was personal, easy to use and cheap. He went on to say that MSN allowed him to focus just on his friends, rather than FB or MySpace, where there was a great deal of information from many people. He also liked the synchronous nature of MSN, and the flexibility of being able to multi-task whilst communicating with his friends. He mainly used MSN with his two Best Friends who lived in his hometown; where he sought advice, support and general gossip. MSN was his preferred method of maintaining his relationships with his Best Friend, as he found it cheaper and easier than speaking on the phone. Mark seemed to be a little concerned that his relationships with his Best Friends would deteriorate if they did not communicate often:

"I don't think we would be this close if we didn't catch up regularly, life moves on and we are all doing so many different things...if we didn't speak for six months, so much would have happened it would be like we didn't know each other anymore".
Therefore, for Mark active maintenance was required to maintain the closeness with his Best Friend and CMC facilitated this. Active maintenance was also required with Mark’s Close Friend relations; however this was mainly done through F2F, text message and phone. He did not feel the need to use CMC as he regularly saw his Close Friend relations through his band or at university. Phone calls were made for arranging meetings, finding out information or organizing events. Text messages were used for social events and updates, whilst F2F communications were used for advice and support; support in terms of issues/problems with his band members or university concerns. He classed his girlfriend as a Best Friend and she was the only Best Friend he had at university, and had regular F2F contact with. He spoke to his girlfriend about personal issues such as health and family. He also spoke to his family using the phone, which was his preferred method of contact.

Mark was asked how he kept abreast of what was happening in social circles and the type of CMC he used to keep up to date. Mark stated that he used various means depending on what he was looking for. For example, Mark was part of a music band and if he wanted to know about the latest news with regards to music then he would use MySpace. However, if it was a university organised social event then he would use FB, known as functional separation. Upon further discussion, it emerged that Mark had a MySpace, FB, Twitter, LinkedIn and MSN accounts. Yet, when it came to maintaining relationships with his Best Friend, Close Friend and Kin, and organising events or finding out about social events, he used the phone and MSN. He stated that his MySpace account was specifically for his interest in music and to promote his band. Mark stated that he had over a thousand contacts on his MySpace, but most people were unknown to him, but interested in the same type of music:
"Most of the comments and contacts on MySpace are for music, or what’s on, I don’t use it for any other social stuff".

Similarly for FB, Mark had over a 1000 friends on his friends list, and stated that he only knew about 20% of these people. The number of people on the contact list was down to Mark accepting anyone who asked to be his friends; he was mainly interested in promoting his music by increasing his social capital. For example, people he accepted as friends were people from friends’ lists or people interested in his band. It was not an important factor who the people on his friend list were:

"its like collecting friends and I don’t care that much to say no to anyone who asks to be friends... the more people, the more I can promote my music ...I don’t care about anything else on there”

Most of the social events promoted on FB were general university activities, and sometimes parties organised by classmates or band members. Mark suggested that he would expect a text or a phone call if it was someone close to him who had organised a social event:

"It’s more personal to get a phone call.....actually I wouldn’t mind getting an instant message on FB but I suppose a text or phone call increases the value of your presence”.

In other words, Mark felt more important when he was invited personally, in particular if it was a close/best friend. This demonstrates that social status is important to Mark, and used SNS to facilitate this, but in relation to his personal interest of music; hoping that one day someone related to the music industry would notice him. Therefore the more people on his SNS accounts increased his chances of recognition. This was unlike the other students within this category; they were more systematic and selective about whom they had as contacts.
Although they had large numbers (approx. 300) of contacts, most were people they had met at university, or friends of friends.

5.8.2 Curtis

Curtis is 21 years old and completing his degree in computer science at Manchester Metropolitan University. Curtis was diagnosed with Autism and Asperger’s, but moderate on the spectrum. He was confident in responding to the questions; however at times it was difficult to keep him on track as he would go off on tangents that were not necessarily relevant. Curtis stated that he had one Best Friend from school, but had moved away for University. However, he would keep in contact with him via MSN and also see him F2F during the academic holidays. His two Close Friend were people from a debating society and the Liberal Democratic, where he was a member. He maintained these relationships through seeing them F2F each week and commenting on their FB status. Curtis was asked who he received support from, and he stated that it was his mother and sometimes his support worker, once a week. He also felt comfortable in confiding with his Best Friend, but while he was away he did not discuss personal issues. He said he felt uncomfortable doing this over the phone or MSN (CMC). For Curtis F2F contact was very important. When asked further about his Close Friend relations, he said he only discussed personal issues if he was upset at the time; otherwise they would mainly discuss issues relating to the groups. Curtis was asked whether he would stay in contact with his Close Friend once they had moved back to their own cities after University; he stated that he would use FB to keep in contact but was unsure whether he would see them again. He attended many of the Liberal Democratic party meetings, and did voluntary work for them, and his local church. This meant that Curtis was out several times a week and used these groups as a form of socialising, suggesting he was a high socialiser. He viewed one friend from the debating society and one friend from the liberal Democratic Party as Close Friend, but did not use these friends for
support, advice or gossip. He suggested that the relationships were very focused and discussions would mainly be around the topics of interest of the group. Although he did admit that due to his condition, he would sometimes misunderstand others and therefore become upset, and his Close Friend would be there to help him. This seemed to suggest that Curtis might view these relations as close because when he felt vulnerable, and was able to use them for support.

Interestingly, when it came to his use of CMC it painted a different picture. Although it seemed he was very actively using SNS and MSN, he used them for specific reasons. As stated above he used MSN to maintain his Best Friend relationship, but used FB and other social forums (YouTube) to upload his videos:

"I visit boxing matches and commentate on them, I go in and film and stand by the right and commentate. I then upload these on the Internet for other people to watch."

He did this as a hobby and was very passionate about his knowledge of the sport. Curtis initially commentated for an amateur boxing club, as a favour for his brother’s friend, and then decided to expand this to other matches. He stated that initially he located the matches through a search on the Internet, would contact the club to discuss the opportunity to commentate. He would send clips or name other places where he previously commentated, and that would open doors for him. In addition, the profile he had built on youtube led to other opportunities. He also revealed he had a radio show at a community station and would promote the matches on the show. When asked about how he used SNS, he said:

"I use FB to comment on politics and tell people about what is going on the political world.......Oh, I also upload jokes and funny posters."

When asked about the people on his FB, he said they were people from the clubs and society he had met and old friends from school and teachers. He did not have a great deal
of interaction on FB with others, he said he used it to inform others, rather than talk to
friends.

"I use FB to inform people about what is going on the world, it’s a bit like my radio
or commentating jobs…..its another way to get the news out there….I do have
friends on there and we discuss politics and it can get a little exciting and
heated…but that’s what I like….but that doesn’t happen enough for my liking”.

Curtis stated that sometimes he had quite serious discussions when it came to politics, and
this was mainly with people from his debating society and political party.
Curtis had what seemed a busy social life and a high use of CMC; with parallels: these
activities seemed similar, in that the people in real life and offline were individuals from
similar groups and interests. Curtis used CMC to facilitate his social life, and without CMC, he
would no doubt find other ways to engage and interact with others. However, the
relationships Curtis predominantly maintains are with individuals with low emotional
closeness. Although he states he has Close Friend, it is unclear whether they view him as a
Close Friend or someone they feel a need to support him, due to his learning difficulty. He
does not socialize with these Close Friends outside events organized by the groups, and this
gives further evidence that the relationship may not be as close as Curtis views it. However,
this does not seem to bother him and fulfills a social need for him; due to his condition this
level of interaction perhaps is right for him.

5.8.3 Tracy
Tracy is a 37-year-old female who teaches at a College. She has lived in Manchester for the
past 20 years and originated from Lincolnshire. Tracy was enthusiastic about her profession
and also stated that she was a semi-professional musician and that was the reason why she
worked part-time; this gave her the time to work on developing her music. She played the
Ukulele and said there was uniqueness to using this instrument in contemporary music.
Tracy’s Best Friend and Close Friend relations were maintained mainly through the phone.
These relationships were with people who lived in close proximity, or in the same country. She preferred this method of communicating; as it was the easiest, most intimate and quickest way for her to communicate. She also used other means, such as FB, to share stories or jokes and promote her music. But kept the more personal issues on the phone or F2F. However, Tracy tells a different story when it comes to friends she has met online and relationships that live in different countries. She believes she has developed a personal connection with many people online, especially through her music interest.

"We have our own little room now online and there’s about fifteen, twenty of us who ... yeah, we’ve all known each other for seven, eight years and I think there’s been times, especially if you’re poorly and you can’t leave the house or something really crap’s happened like a family member is ill and you don’t know what’s going to happen they’ve been an immense source of support for me at times or if you’re not online for a week because you’ve been ill or whatever you go back online and people are worried about you because they’ve not seen you.

This excerpt demonstrates that Tracy has found support from people she has met online, and felt a sense of community developed through a shared interest. Tracy considers some of these people as Close Friend:

"Some of them I would class as being a close friend because we do open up to each other and I think that kind of virtual friendship is an interesting thing really because you’ve got nothing to hide, you’ve got nothing to prove and yeah, some people will pretend to be something they’re not but they’re not the kind of people you end up chatting to every night, sort of opening up about, this happened today, you share your good things and your bad things”

A particular online Close Friend relationship developed into a Best Friend relationship with Dave, who lives in Dallas Texas. Tracy was invited to his wedding and found this invitation to be a true reflection of their friendship, and the feelings she had towards him were reciprocated through this invitation. Tracy progressed the relationship with Dave by attending his wedding after 8 years of meeting him online. Both parties have visited each other F2F, and have become closer emotionally.
The diagram depicts Tracy’s network of relationships; she has a network of online relationships developed through an online community she personally set up. This community has approximately 15 to 20 members with shared interests; some of these relationships she views as Close Friend. She also has a network of relationships offline, which consist of both Best Friend and Close Friend relations. However, she has an outlier relationship, Dave, who was an exclusive online Close Friend relation and now a Best Friend relation, which is predominantly maintained through CMC (online community and Skype).

However, Tracy does not feel that a relationship needs to move to F2F to be close and values her online relationships as much as her offline relationships:

“I think some people are very suspicious of people online whereas I cherish my online friendships and everybody I speak to online, I don’t share that same level of closeness with everybody but yeah, I do think some people … they’re very suspicious and they just assume … we’ve all seen that picture of, ‘Be careful who you talk to online’ and there’s a huge naked guy sat at his keyboard and I think a lot of people think that or it’s just all paedophiles and things like that”

Tracy believes that the same type of investment should be put into online relationships as offline relationships; being open, honest and trusting of other people. She feels this allows bonds to form, through sharing ideals and goals. However, Tracy acknowledges that the online relationships have developed through “their love of music” and this has encouraged them to be more open with each other.

5.8.4 Mikael

Mikael a 38-year-old freelance designer views his relationships quite differently to Tracy. Although both are high socialisers and high CMC users, Mikael does not use CMC to increase his network of interpersonal relationships. Mikael has a strong network of relationships offline, consisting of both Best Friend and Close Friend relations. He has lived in various
cities in the UK and Europe, and has developed relationships through these residential moves. Mikael has strong views about his relationships, and having F2F contact is important to him:

“Because I’d like to see them face to face, you know I have great affection for certain people and good friends who have been very supportive in the past mean a lot to me. I think it’s more of a better sense of joy if they’re actually in front of me I can talk to them rather than just on the phone or texting or whatever”

Mikael makes effort to see his Best Friend F2F in Manchester once a week and other Best Friends, that lived in London, several times a year. He also had F2F contact with Close Friend and Kin relations regularly. Phone and text was also used to maintain relationships. When it came to CMC for socialising, Mikael used email, but did not prefer this method and used it as a last resort. He stated that he did not use any other CMC to maintain interpersonal relationships, yet used various forums and SNS daily. Mikael was a high user of LinkedIn and twitter; and found these useful in increasing his professional network. He had strong views about the use of SNS, and stated that he would use it for professional purposes. Twitter was used to follow and comment on other designers, and although he had met other people through LinkedIn and Twitter, he felt this was solely for professional purposes.

“yea I have made quite a few useful contacts through LinkedIn and Twitter, and you do build a rapport with people who follow the same threads....but I would only see these people as professional contacts and nothing more”

When asked why he did not use FB, he felt it did not support his needs and it was targeted at 'kids':

“I think my only concern with Facebook and things like that are it’s for kids. I see my nephew, he’s eleven, he’s on Facebook pretending to be a nineteen year old with a different picture, I’ve seen his account through my brothers account and I just think it was scary and as his uncle I am quite protective of him and I think there’s people getting in touch with him that are older.. and you do worry about that”
He also stated that he did not like the idea of people contacting him from his past, and if he was interested in having a relationship, he would have done so already. When asked how he compared LinkedIn with Facebook he stated:

"So when you compare it with Facebook, you just sort of think no I don’t want Facebook I don’t want people contacting me from yonder, I’m not interested in but you don’t mind people contacting you from, people that you’ve worked with... but if someone tried to contact me on LinkedIn from my past and it was professionally related, I’d still reject them... they add no value to my life”

SNS was clearly important to Mikael but he used it solely for business purposes; he grouped his relationships into offline interpersonal relationships (strong/medium tie) / and online professional (weak tie) relationships. He was quite specific about keeping the two apart and surprisingly, did not move any weak tie contacts into the Close Friend relationship category. In particular, since he had stated that a few of these professional contacts were with people he had known for ‘many years’, they had supported him in gaining further paid work. In addition he had also met many of these contacts F2F through networking events.

5.9 **High Socialising and Low CMC use**

The participants in the high socialising - low CMC category were predominantly employed and aged over 25. Three out of the four were female; Gita, Ashraf and Khadija were of ethnic minority. Within this category, participants reported that they had a busy social life, due to family commitments, and the transcripts revealed that predominantly time was spent in the work place or with family. Gita, Ashraf and Khadija had a significant number of kin relationships outside the UK. Gita is originally from Nigeria, Ashraf from Pakistan and Khadija from the UAE, and they all used the phone as their primary technology in maintaining those relationships. The transcripts revealed they used the phone for ease of use, privacy afforded, and its immediacy. Skype for video chats was also used on special occasions.
Patterns of communications, the types of relationships maintained and their motivations for not using CMC indicated Khadija and Francesca stood out as anomalies from the other members within this category. Both women can be identified as typical high socialiser and low CMC user; they were single, well-educated with good jobs. In addition, both Khadija and Francesca had a large social network, which they mostly maintained through face to face contact or through the phone. Khadija used CMC sporadically and Francesca refused to engage with it. To further understand these anomalies it would be worthwhile elaborating on their experiences in the following narratives.
5.9.1 **Khadija**

Khadija is a 28-year-old pharmacist, who works for the NHS and has lived in the UK from the age of 15. She was born in the UK but her parents moved to the UAE, after her father found work there. Khadija was sent back to the UK to live with her English grandmother to complete her education. Khadija’s mother is of Anglo-Somali origin, and her father of Somali origin, both parents grew up in the UK.

Khadija is a lively character; she was not shy in the least and started the interview by singing into the recorder giggling. She said she was very sociable and when asked to list the number of friends, she said the 20 spaces provided were not enough. She quite happily reeled off a number of friends, but took a little longer when it came to ranking the friends on emotional closeness.

She expressed that she was out socialising most nights of the week, and had to keep a diary in order to be able to keep up with the hectic schedule. When asked about the types of friends she socialised with, she stated they were people from work, her yoga class and friends she had known for a while. Khadija stated that most of the friends she socialised with on a regular basis were ‘just friends’, and when probed about this, she said:

"I like to keep busy I suppose and that’s why I fill up my diary. If anyone wants to do something then I am up for it. I generally organise the social stuff at work and also at the yoga class. I am not quite sure why I do it, but it seems if I don’t no-one else will".

Khadija was asked about her best friends and the type of relationships she had with them, and whether she socialised with them on a regular basis, and who she spoke to when she was in a ‘crisis’. She expressed that she found it difficult to talk to people about her feelings, and if she had a bad day, she would probably “go home, watch TV or go out with friends” to try and forget about it. Khadija said her friends knew more about her than her family
members and that she preferred it that way. Her relationship with her best friends was very important to her:

"My best friends are really important to me, but we all live on different continents, one of my best friends lives in the UAE, the other in Canada and only really have 1 in the UK, in Manchester. She is busy with her life and although we make the effort to see each other, it probably only works out once a month”.

Khadija mentioned that she made the effort to see her Best Friend at least once a year, or as many times as she could. She said when she travelled to Canada to see her Best Friend (Fatima, who she had met while at University); they would make the effort to go away and spend quality time together. Similarly, this was the case with the Best Friend in the UAE (Ayesha, who she went to school with in the UAE); they would generally spend a few nights together, in the UK or UAE. She meets a Best Friend, Sarah, once a month. They met at a University party. They now meet to have a night over or go on holiday together. Although the frequency of seeing her Best Friend’s was not as often as she would have liked, she felt the time she had with them was valuable:

"When I hook up with my girls, we talk and talk and they know everything about me and I know everything about them. All the problems, insecurities and concerns we have, we let it all out. Don’t get me wrong, it’s not the only time I speak to them, they know I am here for them anytime as they are for me. If any of them lost their job, or God forbid a family member, I would be there for them”.

Khadija stated that she would have regular contact with her Best Friend through the phone, and if she needed any advice she would generally call her Best Friend’s on the phone or text message. When asked about the time difference when trying to contact her friends abroad, she said she would use email to briefly explain the situation and then use the phone or Skype for a more detailed conversation. The transcripts reveal for Khadija maintaining intimacy and closeness with her Best Friend relations, face to face contact is of high importance. This may be due to Khadijas way of expressing her feelings, in that she feels
more comfortable doing this face to face or on the phone, rather than on any other medium.

Khadija’s active network of relationships consists predominantly of support clique (Best Friend) and the outer layer affinity group (A) (Dunbar, 1995). However, the sympathy group (Close Friend) is rather small in number.

The transcripts revealed that when it came to the Close Friend, Khadija said it was someone who she worked with and had developed a close friendship with. They discuss work and career objectives, or any other issues that may relate to general life:

"Sue is my close friend at work, I don’t particularly let people into my life because I don’t need to.. but then with Sue, we really got close after an incident at work and I helped her out. We tend to go out often and talk about....well shallow stuff really, like my car going wrong or our witch manage (laughter)... Sue tells me a lot more stuff about her personal life, than I do to her... she tells me about the problems with her boyfriend.. I don’t like talking about that stuff to people at work.. I have my girls and family and don’t really need anyone else to discuss those things".

Khadija has regular contact with her Close Friend, Sue; they work in the same department and socialize together on a regular basis. However, she kept the relationship in a place where she felt comfortable. In other words she did not have the desire to share more intimate issues with Sue, and did not need her support, validating SBH. However she seemed open to supporting her Close Friend when it came to her personal issues but did not want the same in return. As Khadija’s comment states above, she had the network of Best Friend relationships needed for her wellbeing and support.

The Close Friend relationship was with someone from her employment, with whom she shared similar interests with and similar experiences at work. It seemed that Khadija was happy for this relationship to continue the way it was, but there was a feeling that she did not expect this relationship to last. Khadija did express that she makes friends anywhere and was not intending on staying in the same job and was applying for jobs abroad. This
may be an indication that Khadija did not want to invest in the Close Friend any further as it was likely to come to an end once she had moved on.

With regards to kin relations, Khadija’s parents reside abroad in the UAE, and she lived with her sister in the UK. She had two other siblings living in the UK studying at various Universities around the country. She stated that she was quite close to her parents but due to some cultural barriers she did not confide in them about personal issues. She contacted her parents through the phone and Skype once a week and mostly spoke about work and family situations. She stated that she spoke to her mum about work quite often, as her mother was a nurse and had also previously worked for the NHS. Khadija’s siblings live in the UK in various cities, and she spoke with them about once a week on the phone. She is the oldest of the siblings and stated that she was generally advising her younger siblings on finance, relationships and other general aspects of life.

Although Khadija had an outwardly very social persona and mixed with many people, in reality she did not see these people as close or best friends, and instead it was a way of keeping busy and generally enjoying socializing. She seemed to be deeply private, and most of her social network did not know Khadija on a deeper closer level. This may be the reason why a large proportion of the people she actively socializes are of the affinity group; she is able to stay within her boundaries of keeping intimate issues private.

She actively maintains her Best Friend relationships through the phone mostly, but also made the effort to spend quality time with these Best Friend relations F2F. Her Best Friend in Manchester, who lives in the same city, was someone she confided in and would seek advice from, mostly face to face. It seemed that Khadija was secure in her Best Friend relationships and did not require extending this type of relationship any further with anyone.
else. The Best Friend relations were established from school and university and the impression Khadija gave was that she did not have the desire, or as she stated "emotional space", to develop other friendships. In other words, she did not want to invest the time needed to take other friendships into the Close Friend or the Best Friend layer.

With regards to CMC, Khadija revealed that she was a low CMC user but used Facebook sporadically 'out of boredom'. She had over a hundred friends and at times reached to almost three hundred. At this point she would then 'cull' the number of friends back down to one hundred.

"I meet a lot of people and I get asked for my facebook details all the time, so I say yes and then see how it goes. But every few months I carry out a cull, I send out a message along the lines of, if I haven't heard from you in the last few months then I am going to delete you – no offence. I then delete people and I like to get the number down to 100".

When asked to elaborate on this further, she stated that she didn’t see the point of having a great number of friends who she did not engage with. She was asked who the one hundred people on her contact list consisted of. She explained these consisted of kin, Best Friend and Close Friend relations. She actively engaged with this core group of people, mainly through face to face contact. Therefore, her use of CMC was limited, as she preferred socialising through face to face contact. Khadija also stated that she would turn off her facebook account quite a few times a year, as she felt it was a distraction. When asked to explain this further, she stated that she would have facebook logged in on her phone and would sometimes carry out ‘people stalking’ where she would look through people’s photographs or go through peoples contact list. Khadija felt guilty about ‘prying’ into other people’s profile, yet felt some gratification in being nosey.
“Sometimes I look through someone’s profile that I have just met, then investigate their friends and sometimes, if I fancy someone, I do a thorough investigation. Facebook is only good for that really...finding out about people. If you don't like what you see, you probably won't like them in real life...If I fancied someone and they had some weird photographs up then I wouldn’t pursue it...it’s a bit like doing a background check on someone”.

Although Khadija has an online presence and has a social network account, she uses it as a tool to discover further information about new people she meets face to face. This would suggest that Khadija uses Facebook to make initial judgments about new potential friends, and whether she wishes to include them in her network of relationships. Therefore, CMC is a useful tool for Khadija, however, she does not use it to maintain her relationships.

5.9.2 Francesca

In contrast, Francesca is a 33-year-old single female who lives and works in Manchester and does not have an online social network presence. Francesca is a professional with a Master’s degree who works for a government agency. When Francesca was asked whether she had a SNS account she strongly dismissed the purpose of such sites. However, she insisted this was not said in ‘protest’, but she genuinely disliked online social networking sites. Francesca stated when Facebook first appeared she signed up just like her friends and started the process of completing her details as requested. However, whilst completing the details she felt uncomfortable about how and where the information would be presented, indicating a lack of trust in SNS. She stopped the signing up process when her FB account linked up with her Hotmail account and she was asked to use the email addresses to invite other friends. It was at this point she closed her account:

“So I keep addresses in my hotmail account just in case somebody, you know, turns up out of the blue. So all these names... like for exes and just all these names from the past and it just made me feel really peculiar and I thought, ‘hang on a minute,’ I just thought, ‘actually yeah, this is what Facebook is about, it’s getting in contact with people that you don’t know anymore,’ and I was like, if I wanted to be in contact with these people, I would be”.

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Francesca did not feel FB served a meaningful purpose, and that she was able to maintain relationships with people she wanted to without the use of SNS. She had friends from school/college, and used email or the phone to maintain those relationships.

*I use the phone because I can just pick it up and speak to my friends if I need to, if I want to arrange something with a friend, then I'll email them and do so.. if I want to go visit a friend abroad or in London, then I'll text or email.. what is FB going to do that is better than that?..*

She was adamant and confident about the relationships she maintained, and felt strongly about the reasons for not wanting to maintain certain relationships. For example, she stated that she had valid reasons for keeping in contact with certain people and not with others:

"Look... if I've not kept in contact with someone from school, it doesn't mean that I don't care about them... or that I don't like them.. but we probably didn't have much in common or have the desire to want to build a relationship. If that was the case, why would a stupid computer generated program make me want to change that.. we haven't kept in contact for a reason... people move on and in different directions.. and that's fine.. we can't be friends with every single person we meet in life.. relationships aren't like that and nothing is going to change my mind about that!"

Francesca sounded secure in her relationships and listed 20 friends easily. She had a mix of Best Friend and Close Friend as well as people she considered 'just friends’. She had a busy social life with a full diary, met with many friends during the week, as well as maintaining hobbies such as ballet and yoga. Interestingly, although she viewed FB as an inadequate tool to maintain or build new relationships, she used online dating sites to meet men and went on many dates through these sites, at least twice a month. When asked about this, she felt that most of the people connected on FB were not real friends but with dating sites you knew where you stood.

*"I find it quite objectionable the use of the word 'friends' on FB. How many real friends have you got? it's actually for those people who aren't your friends. I've heard the same story from two different people, of getting some kind of poking from somebody that they went to school with and signing them on, seeing all their pictures, finding out what they've done, you know, finding out about their lives and then seeing them in the supermarket or on the street a week later and they've just blanked them, what is that about? it doesn't make any sense!"*
Francesca viewed FB as a way of publicising ones social status, ‘proclamation of life successes’ as she put it. She stated that she might have felt different about FB if she were married with children, because she would be very excited about sharing this news with everyone. However, she quickly dismissed this idea and stated that FB was a false indication of what was actually going on in peoples’ lives; it was the good bits that people wanted to ‘show off’. She gave an example of going to a social event where people took photographs and set up poses for the sole purpose of uploading them on FB. In her mind this was the reality of FB; it was an assortment of false stories and therefore she did not value its content as anything meaningful. It seemed that Francesca had various views about FB and had concerns about coming across like someone who had little success in life, because her life would be open to scrutiny if she had a Facebook account. Furthermore, she suggested that she did not want to see or be reminded about how other people were doing; that somehow their successes would highlight her own feelings inadequacies. Francesca’s main concern was that she had not met a partner and settled down and had children. She stated that she felt quite miserable most of the time and although she had a busy social life, she felt lonely. It was unclear whether she mistrusted FB or whether she was more concerned about her social status.

When asked whether her Best Friend, Close Friend and Kin had SNS accounts, she stated that most of them had SNS accounts, but she did not hear anything particularly good about it. In fact she felt that most of the things she had heard were negative, she gave an example of one of her friends trying to convince her to sign up, but was ‘terrified’ when she found out he wanted her to join him in stalking people.

Francesca valued her relationships that she maintained F2F and through the phone. She visited friends who lived abroad and kept in contact via email. Francesca rarely socialised with more than one or two people at the same time. She kept her friends apart and she did
not want to introduce them to each other. She felt she could communicate and have better relationships with her friends in small groups, and found large groups uncomfortable, as it limited her ability to spend quality time with people she wanted to be with. She was very open and intimate with the friends she maintained and felt that this was something she was unable to do through FB, due to a general lack of privacy; and if forced to have an account, she would have a limited profile because she was concerned about privacy issues and having her personal information on the site. When asked about her profile on dating sites (which would include personal information) she stated that it was not about “how well you had done in life or showing off pictures of family and children, it was about interests and a real persona of oneself, as you were there to meet people, not to stalk”.

The more information Francesca shared the more complex her character became. She had strong views about SNS and her relationships; but these views seemed to be based on her insecurities about how other people viewed her. She was apprehensive about rekindling old relationships, because she was concerned about how genuine those relationships were, or would be, and therefore had trust issues. She had real life relationships but was not comfortable about sharing those relationships with other people. It makes sense then that if she wanted to keep her friends separate and spend time with them individually, that FB would not be an appropriate platform to maintain those relationships. It was unclear why Francesca was uncomfortable with her friends meeting each other or why her social status was so important to her. However, it was clear that SNS was not productive or conducive in building or maintaining relationships for Francesca.

5.10 Low Socialising and High CMC use

The participants in the low socialising - high CMC category were predominantly employed and married. The transcripts from this cohort revealed their main priority was their employment and family. Therefore, socialising was limited due to childcare or family
commitments. All used a form of CMC to interact with relationships online. These relationships consisted of kin relations, current friends, friends from school and work colleagues. All participants had a FB account but also used other CMCs such as, Messenger and Skype. The main use of FB was to update status, upload photographs, or view photographs and wall posts. The majority of the cohort maintained relationships offline and used CMC to augment offline relationships. However, Sean and Robert stood out as anomalies, within this cohort, as both participants social network of Best Friend/Close Friend consisted of online only; though their motivations to socialise and build bonds were similar, their experiences were quite different. To further understand these anomalies it would be worthwhile elaborating on their experiences in the following narratives.

5.10.1 Sean

I met with Sean at the Manchester College where he was a student in his final year of his degree program. He was 22 and grew up in Bolton but had moved with his mother to Manchester about 10 years ago. He was an only child and still lived with his mother, who was unwell. Sean mentioned that his mother suffered from various illnesses and he looked after her, and that was one of the reasons why he still lived at home. Sean had a physical disability, he was a little nervous about being interviewed. After a while he started to relax and was comfortable with answering the questions.

Sean listed 7 people in his friends list and he seemed quite confident in listing the people as well as ranking them. He did not score any of his friends at 10 but rated 3 at 9, 2 at 7 and the rest below 6. When probed about the ranking, he said that he did not believe that any relationships could be a 10, and was not sure whether this was achievable. He listed Anna as one of his Best Friend, and I asked what their relationship was like and whether he depended on this person for support. He felt that he did depend on this person for emotional support and he spoke with her regularly about personal issues and vice versa.
When asked about what they did socially, he stated that he had never met Anna, and had met her online and they maintained this relationship via Messenger. She was a young woman, married with two children who lived in the USA. Interestingly, all the friends Sean listed, bar one were people he had met online and solely maintained these relationships through CMC, he had never met them in real life. The one person that was not an online friend was a class friend that he ranked 3 on the emotional closeness.

He spoke about wanting to visit the friends online in the future, but currently was happy with the way things were. This dynamic was intriguing since Sean was exposed to other people at College that were his own age, with similar interests. Yet, the Best Friend and Close Friend relationships he maintained were with people online that he had never met.

We discussed his relationship with Anna and Claire to understand further what Sean perceived as Best and Close relationships. Two of the Best Friend’s lived in the USA: as stated Anna was 28 and married with two children; Claire was in her mid 30's, married with no children. Sean explained that his relationship with these women was platonic and that he enjoyed speaking with them. He volunteered this information, as no question was asked about the level of intimacy of his relationships. He stated that he had met these friends in an online chat room ‘about 4 to 5 years ago’ and moved from the chat room to Messenger, and spoke with them almost every day. I asked about the time difference, and he stated that he stayed up quite late which did not deter him. Sean expressed that he would confide in these Best Friend’s about personal issues, and felt that they accepted him for who he was:

"I think sometimes people judge you on the way you look, I find Claire and Anna really open minded and non-judgemental. I am blind in one eye and have a tick and sometimes I think that puts people off, so I don’t bother with them”.

"I can speak to Claire….or even Anna about anything, I can get really stressed about my mum… who is an alcoholic and it is really difficult to live with her at times…. I
can’t speak about these things to other people… they probably wouldn’t care anyway”.

Sean’s mother was an alcoholic, and as the interview progressed it came to light that he had to care for his mother quite a lot, which he struggled with at times. He expressed that if he was not able to confide in his online friends then he would have probably killed himself by now. Although Sean shared personal and intimate issues with his online Best Friend’s, he was asked how he would react if a life-threatening situation happened with one of these friends in the USA. How would he find out about it, and how would he support them. Sean took a while to answer and seemed at first a little unsure about how to respond.

“Well… I suppose I would know because I wouldn’t see them online for a while? I have them on facebook, so I guess I would find out that way?… but I would hate to think anything would happen to them… I would probably fly out and see what I could do to help…I’d have to find the money from somewhere, but I would do my best”.

We spoke about the people at College and whether he had included any of these people on his list of friends. He expressed that he included one, which he was not very close to but they would share programming code. In other words, they would support each other for academic purposes only. He explained that he liked the people in his class but was unsure about how they felt about him.

“I like the people in my class.. I am happy to help anyone out with codes and stuff and we go to lunch together… But after college we don’t really go out or anything.. I’m not sure whether any of them would want to go out with me anyway…with the way I look and stuff..”.

Sean’s disability was not outwardly obvious and he spoke clearly with a strong Bolton accent. Once he relaxed he seemed to talk with confidence, which suggests that this would be the case when he was interacting with his classmates. However, the impression Sean gave was that he had insecurities about the way he looked, and therefore made assumptions about how other people perceived him. This could possibly be the reason why he did not form any close bonds with his classmates, for possible fear of rejection. Another
possibility could be that he was concerned about his family situation and the stigma it could possibly bring.

Sean was asked whether he preferred exclusive online relationships rather than relationships that could develop F2F. His response was that he would definitely prefer F2F interaction but found it easier to communicate online as he felt less judged. However, he had not attempted to meet anyone that he had met online. For example, he had two online friends; both male living in the UK (one in Liverpool and the other in Wales) that he ranked 7, which were considered Close Friend relations. These Close Friends were people he had met through online games. Sean stated that they had discussed meeting these Close Friends to go to gaming events but had not carried this forward due to finances. It was unclear why he viewed these people as Close Friend, rather than acquaintances. However, he explained that he had shared his phone number with these Close Friends and that they would text and share jokes with each other. They would also discuss college and work. One of the Close Friend relations was in College and the other unemployed. When asked about whether he would discuss any personal issues with Close Friend, Sean stated that he would only share issues that related to College or jobs. and did not want to discuss his mother, as he felt it was unnecessary. On the other hand they did discuss girls that they had romantic inclination towards.

Sean’s network of online relationships implies confidence in using the technology, and also a level of trust with few concerns for personal online privacy. His network of relationships, in the context of SBH, reveals lower values for the most intimate layer (N Best Friends = 2). The two inner most layers of the SBH are solely online relationships, whilst the outer layers are a mixture of offline and online relationships. This raises some interesting questions on whether the online relationships would disintegrate if communication reduced, or even if
Sean developed offline relationships. It seemed Sean did not have much contact with kin; he did not speak about his father and was an only child. He found it difficult to interact with other people but found the Internet a source of friendship and emotional support. Sean was classed an anomaly, who had difficulty forming close personal relationships. CMC offers him opportunities for developing close relationships, on his terms, and this may explain why he only has 2 closest friendships, rather than SBH defined value of 3-5.

5.10.2 Robert

Similarly, Robert a 48-year-old man who taught IT at a local college found CMC the only way to maintain and build relationships. Robert was interviewed at his workplace, and came across as a friendly person. He was extremely overweight and found it difficult to breath, he said he suffered from asthma and needed to lose weight.

Robert listed five people when asked about his network of relationships, one Best Friend and four Close Friend; he did not list any colleagues from his employment. He stated that he had a FB account with approximately ten people, and maintained his Best Friend and Close Friend mainly through the use of IM. He used FB for business purposes and this was to promote his photography. He was quite proud of his work, and wanted to show some of his photographs. He showed me some examples uploaded on FB and these were mostly photos of animals and nature, but did also include some shots of women in lingerie. The style of photograph was quite old fashioned, in that they had an 80’s look; using a soft focus lens, with models wearing brightly coloured lacy lingerie and big permed hair. It was a little odd. Robert was quite open about his photography and seemed quite proud of his ‘glamour’ work. He stated that he would take photo-shoots for free or just charge a small fee for travel expenses for women who wanted to get into the glamour model industry. He explained the reason for this was that it allowed him to build his professional profile, whilst
offering a professional service to those women with financial constraints. When asked about how he made these links, he stated that he would go to chat forums, or was recommended to others.

It came to light that most of the people on his FB contact list were previous glamour model clients and all women. He did not allow any men on his site, he stated that a few male colleagues asked to ‘friend’ him on FB but he declined as he mistrusted their intentions – he felt they were trying to make friends with the models rather than having a genuine interest in making friends with him.

Roberts Close Friend and Best Friend on his IM were also models he had met through CMC, and then taken on as clients. Interestingly, he grew these clients into friendships and felt these relationships were genuine and confided in these people. He said they kept him company and although he did not see them F2F often, he spoke to them regularly through IM. When asked about how often he would see them, he seemed a little uncomfortable in answering the question. However, he stated that the only time he saw them was when he was taking photographs of them. He felt explained further, it was difficult to meet due to time and distance. This gave the impression that deep down he probably was not as secure in the relationships as he first made it out. Nevertheless, they were his only support and sympathy network and he felt he could confide in them.

He had one sister, whom he visited once a year at Christmas, and did not build any relationships at his place of employment. Robert maintains a total of 7 ties within the two inner circles of Dunbars (1995) SBH, and may not have the need for the two outer layers. On the other hand he may feel unable to extend relationships beyond the two inner layers. Therefore for Robert, CMC was an integral part of his social life. Although it was unclear how the female contacts felt about their relationship with Robert, it was clear that it fulfilled a social need for Robert. Without CMC Robert could potentially have been quite lonely.
5.11 Low Socialising and Low CMC use

The participants in the low socialising - low CMC category were predominantly employed and married. The transcripts from this cohort revealed that the cohort had a demanding family life and did not have much time to socialise or use CMC. The transcripts revealed that this cohort generally had tried CMC and all had FB accounts, but the novelty had worn off and interest was modest at best. The most popular form of interaction for this cohort was F2F contact, with friends and family. CMC was not required to maintain relationships or to enhance socialising. However, Emily, Norah and Terry’s transcripts revealed interesting information about the dynamics of their relationships, and also their motivations for using CMC. For example, Norah did not socialise much as her child suffered from autism, which she felt restricted her. However, she did not use CMC to build or enhance relationships, rather she created a fake account to keep tabs on her estranged father. Emily, without any family responsibilities but with very good social and communication skills, preferred her own company and shied away from CMC. Terry seemed to have the desire to build and maintain relationships through any means, but felt restricted due the type of relationship he had with his wife. To further understand these anomalies it would be worthwhile elaborating on their experiences in the following narratives.

5.11.1 Terry

Terry is a 42-year-old male self-employed carpenter, living in Manchester with his wife and son aged 5 years. He was a confident character and very enthusiastic at being interviewed. He had stated that he always had a lot to say and was quite friendly. I interviewed Terry in his home and I initially asked about his background. Terry grew up in Manchester and most of his family members lived in greater Manchester. He stated that he lived and grew up in the countryside and later moved to the city in his late teens.
Terry listed 10 people as his friends and at times struggled to come up with names. Two of the people on the list were his family members. He said that he used to have many friends but with age, they had moved away and lost contact with them. He went on to say that he still knew a lot of people, but most of these people were acquaintances rather than friends. He stated this was probably due to his lack of contact with people at work:

"Oh dear! my friends list looks a little light doesn’t it? I actually know quite a few people but I am not sure I would necessarily call them friends... I might meet them in the pub or at local festivals, my son’s school or whatever. I work for myself so I don’t really have much contact with people most of the time”.

Terry stated that he would generally go to the pub and meet a couple of Close Friend and catch up on some gossip or talk about the sports. He valued these relationships as it was a form of escapism and he enjoyed the company of others. As Terry stated in the above quote, he mainly worked alone and would spend long hours in his workshop. He enjoyed the solitude of his work but also enjoyed socialising. When asked who he would turn to if he had a bad day he stated:

"If I’ve had a bad day, I’d go home and have a beer and probably tell the wife later. I’d only call my Best Friend or Close Friend if someone died, I wouldn’t even call them if I lost my job, people have their own crap to deal with...they don’t want to be hearing about mine. I’d probably tell them if I was speaking to them or met them though”.

Terry rarely discussed problems or personal issues with his Close Friend relationships, but did emphasis that it depended on the mood of the other people and the vibe on the night. If everyone was having a good time, he did not want to “dampen the mood with his problems”, and would rather enjoy the time with his Close Friend. He only interacted with these friends in the pub and did not carry out any other activity, apart from possible parties they may have been mutually invited to. Terry also stated that he would still go to the pub, even if his Close Friend friends decided not to go; there was always someone there to talk to and it was more about winding down after the week, than for any other reason.
Terry’s stated that he had four Best Friend’s and ranked three of these relationships at 10 and one at 9. However, one of these relations was his wife and the other his sister, both ranked at 10. We discussed his two non-kin Best Friend (Kerry ranked 9 and Garry 10) and the type of social activities they did. He stated that Kerry lived not very far from him and had regular contact with him and his family on a Sunday afternoon, or would join him for a drink sometimes at the pub. Gary had been a long standing friend, who he met when he moved to Manchester at the age of 19, but had since moved to France. Although he did not communicate with Gary very often, he still felt their relationship was as strong as it has always been:

"We don't speak very much.. maybe a call now and then or text on special occasions... but that doesn't mean we are not close.. in fact when he visits the UK, it's like he never left”.

Terry seemed a little subdued when talking about his Best Friend Gary, he said he missed him but understood that life had to go on. He said he would rely more on his wife and sister for emotional support but did talk to Kerry if he needed to. Terry raised a concern about sharing too much detail about personal issues, such as his marital problems with Kerry, as she was a friend of his wife too.

Terry’s own circle of friends was quite small, and the support he received was mainly from family. His relationship with Gary was distant, with limited contact; although he felt this did not hinder the closeness of their relationship. However, the relationship with Kerry seemed a little fragmented, as he felt he was not totally open with her as she was a family friend. This seemed to be the case with quite a few friends Terry listed. Most of them were the husbands of friends of his wife. Terry socialised with people he met in the pub and shared common interests with them such as sports, but he seemed to suggest that he did not rely on this set of friends. It was more of a convenience factor, yet he did rate them as Close
Friend. However, these relations, did not attend his home or mix with his family, he suggested that he wanted to keep the two apart. This is not surprising if he wanted to be open and frank with his Close Friend, the danger of allowing friends to enter into the ‘family friend’ zone could potentially compromise that friendship.

Terry’s wife (high socialiser & high CMC) was also interviewed and painted a different picture when it came to her social circle. She stated that she had many friends and did not find it difficult to name up to 20 friends. Ten of the friends were ranked 7 and higher. Terry’s wife, Charlotte was a 32 year old creative director and was very confident about her social network. She socialised with Best Friend’s regularly F2F and through the phone. She also went out regularly after work with friends she considered Close Friend and acquaintances. She stated that she would quite often confide in her friends and tell them things that she did not share with her husband. Charlottes listed 5 Best Friend’s; 2 of these from previous jobs, 1 from University, and the other 2 she met through social gatherings before she was married. Her Best Friend’s were also married and at the early stages of growing a family, similar to Charlottes family life. Both Charlotte and Terry socialised as a couple with Charlottes Best Friends and their families. However, Terry did not consider any of these relationships as close or best friends, and did not indicate a desire to develop these relations. However, he considered his wife his Best Friend; interestingly Charlotte did not list Terry as one of her Best Friend.

The couple had very different types of networks of friends and this may be due to the nature of their jobs, or previous socialising. Terry was charming, humorous and as confident and outwardly spoken as Charlotte, yet possibly due to his work he had a very small network of friends. It was unclear why his Close Friend relationships did not develop any
further. Although the fact he wanted to keep them separate from his family may have caused a barrier for these relationships to develop any further.

Terry’s CMC use was also contrary to Charlotte’s use, as he used it to a limited degree, while Charlotte was a high CMC user; regularly updating her profile status and posting on FB. Terry explained that he did not have much to say on FB but would sometimes login to see what people were doing. A large proportion of his contact list was also mutual friends with Charlotte. Terry revealed that he had joined an online sports ‘club’ where you would set up a fake team with other members and play out the football league. He sounded quite excited when explaining the online game. He stated that he met with these fellow gamers in London on two occasions and although these were complete strangers, they had the game in common. He did not befriend any of them or add them to his Facebook list. Maybe he did this to keep these people separate from mutual friends with his wife. Most of Terry’s relationships are intertwined with Charlotte’s, see image below (figure 3).

Although most of the relationships overlap, it is Charlotte who dominates these relationships as well as having a larger set of relationships independent from Terry. It is not surprising for relationships to overlap with couples, however is interesting when one party dominates relationships both offline and online. In addition, Terry seems to have a strong desire to

Figure 5.1: Layers of relationships dismantled, based on Dunbar’s (1998) Social Brain Hypothesis
build his own relationships but for whatever reason seems to be acquiescent to relationships imposed on him.

5.11.2 Norah

Norah is married and practices alternative medicine as well as studying nutrition part time. She is 29 years old and lives in Manchester. She seemed very nervous about being interviewed and was a little concerned about being recorded. These concerns were alleviated following an assurance that all participants’ personal details would be kept confidential. Norah has a small network of friends that she maintains through F2F, phone and sometimes email. She stated that she preferred the phone because it was immediate and she could hear the persons voice and gauge how they were feeling; this was important to her. Email was an option for her, if the person was unavailable immediately it allowed the person to get back when they had a chance. With regards to email, Norah made a point that email was not always her first choice because she had concerns about it being misinterpreted; for example if it was short she may interpret it has being rude or curt. When asked about SNS, she stated she used IM and FB but reduced her use of IM as the people on her IM contact list had moved to FB, and used IM less. When asked whether she had transferred to FB, she gave an interesting response.

"I don’t use FB for my friends.. I use it to stalk other people”.

Initially when she was asked to elaborate on this statement she laughed and shrugged off the comments and we continued to discuss her CMC patterns. However, I felt this issue was important and therefore returned to the subject at which point she seemed a little more open to explaining her comment of ‘stalking’. Norah explained that her father had left her mother and sister when she was around 12, and explained that it was under very difficult circumstances. She explained that her father was quite violent and not a very nice person to her and her mother. He had remarried and had other children, and she felt the need to
'keep an eye’ on him. Norah initially found out about her step brother who was about 9 and found he had a facebook account. She set up a fake account and befriended him. Through his page she is able to see her father’s page without being identified. She stated that she logged into facebook to see what her father was up to and that was it, she wasn’t interested in making friends or maintaining social relationships through this medium. When asked why she did this, she stated

"I hate my father and all the stuff he has done to us, my mum suffers from depression and he sits there playing happy families..I never want him to find us to come into our lives and so I keep an eye on where he is and what he is up to..so we never bump into him”.

Interestingly, FB does offer the option of letting people know where you are and what you intend to do. This was a valuable tool to Norah, as she felt she could keep a track on her father. Norah’s father also lived in Manchester, which was intriguing, as she seemed to have a great deal of anxiety about bumping into her father.

Due to the fear of a chance encounter with her father she had isolated herself from other people:

_I don’t go out much, friends always want to go for a meal or they get to know you and you meet their friends and then its bound to happen.. someone is going to know your father.. I can’t risk that and I can’t risk that for my mother. My son is hard work too and I find it difficult to manage him outside the house..I’d hate for my father to find out my son was autistic, he probably be happy about it...the bastard...sorry”._

This offers some indication to the reasons why she is a low socialiser. CMC would seem a way to gain some support or to further enhance her social circle. However, Norah seemed paranoid about the use of any CMC and felt little trust using it; one of the reasons why her CMC use was limited. It was unclear whether she had any negative experiences using CMC.

Norah had family who lived abroad, but maintained these relationships through the phone. Her Best Friend relation was with her husband and stated she had two Close Friend relations she met in the mosque; she would visit them on special occasions, but only if it was at their
home. She did not maintain any acquaintance relationships as she felt she did not have the desire or need to.

5.11.3 **Emily**

Emily is a 38 year old single professional, originally from London. She teaches at a local further education college. Emily was very confident and relaxed at being interviewed at her home. She was initially asked about her relationships and she stated that she had three Best Friend and three Close Friends. Emily stated that her Best Friend relations were long standing and over ten years; she has not developed any new relationships since then. She was asked why she did not want to make any new friends and she said it was ‘too hard work’ and that it was easy with friends she already had:

"Because, I think when you’ve known someone for that long, you’ve ... and you’ve got a shared history, you then don’t have to explain yourself every time you see them because they know how you are, like as a person and how you deal with certain things so you can just pick up a conversation really easily and tell them something that’s happened and they’ll know exactly how you feel about it because of that shared history”.

One of her Best Friend (EM) was a girl from school who still lived in London. She met up with this friend once a year over the Christmas holiday. The other two Best Friends were (DG & BE) male colleagues from work. The Close Friend relations were also colleagues. Interestingly, Emily rarely used the phone or CMC to communicate with her Best Friends, and revealed she would normally contact EM when she was in London over the Christmas period. When asked who Emily confided in, she revealed she would receive support and advice from the Best Friends at her employment. She was then asked what she did socially with the people at work, and she stated they would see a film or go on work outings. She did not see her Best Friend’s outside of these times, unless there was a significant social event (e.g. Weddings or Birthdays), but they rarely contacted each other outside these
times. Emily was asked what would happen if she moved to a different job and no longer worked with her Best Friend relations.

"We would make an effort to keep in touch, and be available for each other, if there was a need I guess? I've not thought about that much”.

Emily seemed a little unsure about how to respond to the question. She mentioned her mother died a year ago and received support from a Close Friend whom she worked with, and lived nearby. However, she did not call her Best Friend till she got back to work. Emily stated that her mother had been sick for a while and her health had deteriorated in recent years, and her death was not a surprise. It was unclear why she did not contact a Best Friend, especially during a time where she may have required significant emotional support. The predominant part of Emily’s social circle, and indeed socialising, took place at her place of employment. It was not clear whether her colleagues viewed their relationship the same as Emily.

Emily’s use of CMC was limited although she was very computer literate. She possessed a FB account and initially (when she first signed up) logged in quite often, but this reduced as the initial interest wore off. She did not use FB to increase her social network, and the friends list was mainly Close Friend relations and acquaintances:

"A mixture of close friends and acquaintances and complete strangers (laughs) that I think are associated to someone I know”.

The above quote demonstrates Emily does not pay much attention to who is on her contact list, and seems to accept anyone who asks. Yet, she does not engage with them to find out who they are, and why they have asked to befriend her. Emily stated that she was not interested in logging in to see ‘friends’ profile. She did not see the point of going on FB to see how happy other people were. It made her feel inadequate and reinforced negative feelings of loneliness, or that she had something missing from her life:
"people and their boyfriends and husbands, happy pictures and I don't want to be reminded that I am not in a relationships....people only think you’re worthy when you have a boyfriend”.

This suggested that Emily made a conscious effort not to view other people’s profiles, and the possible reason for why she had lost interest in the site. Emily felt lonely or inadequate when viewing other people’s messages and photographs. The main reason why she used FB was when she received a reminder through email regarding events:

"Like for instance there’s ... over this weekend, because it’s the Halloween weekend, I’ve been on Facebook, I’ve got three events that I’m invited to. I’ve also been texted something to go to on Friday and invited to meal”.

There was obvious potential for Emily to increase her network of relationships as she was invited to events through FB, but seemed to shy away from these. Emily came across very confident and on first impressions seemed an outgoing person. However, the reality was quite different and Emily’s perception of other people was quite negative. Subsequently, she was missing potential opportunities in meeting a partner, and increasing her social circle, both in the real world and through CMC. Emily seems to view CMC and the real world similarly. However, this leaves Emily in a vulnerable position as her friends are predominantly at work, and if she were to leave work it is unclear whether these relationships would continue, due to her lack of technology use in maintaining relationships, thus leaving her in a position where she could potentially be very lonely. Thus, low socialisers are atypical in SBH terms.
5.12 Summary

The participants were categorised into four sub-categories based on their level of real world socialising and their online social activity. These categories were listed as, High Socialising – High CMC, High Socialising – Low CMC, Low Socialising – High CMC Low socialising – Low Socialising. Within in each sub-category the participants had similar views on the reasons for their social activity both offline and online. However, there were some interesting anomalies and the interview transcriptions revealed that not all the participants viewed socialising, forming relationships, and CMC use in the same manner. These instances were considered for further analysis.

Generally, all the participants interviewed listed Best Friend and Close Friend within their network of relationships. Their views of what constitutes Best Friend and Close Friend were similar as shown in Figure 1. However, some of the narratives demonstrated that the perception of who Best Friend and Close Friend are varied quite differently from one individual to another. For example, Khadija’s Best Friends were people she grew up with, and had formed deep and meaningful relationships with. Yet, with Terry he hardly communicated or interacted with his Best Friend, and felt restricted in being open and honest with his second Best Friend, but substituted kin to fill this gap. Whilst Sean had never met any of his Best Friend relations but felt they had saved his life. It is clear that all the individuals required emotional support and interestingly found ways to achieve this. However, it was unclear whether the depth or quality of emotional support was the same across the participants. Sean’s lack of F2F interaction with others hinders his ability to form deep and meaningful relationships in real life; although he has developed relationships online, there is a danger that these relationships could disintegrate if he lost his internet connection. This poses some interesting questions on whether exclusive online relationships are equivalent to offline relations. Yet for Sean, there is no doubt that he probably values these relationships as much as Khadija and Terry.
The transcripts reveal that Close Friend relationships were maintained through similar interests, and mostly through regular F2F contact through work or social activities. The narratives suggested that Close Friend relations serve a purpose in providing a level of social companionship, but the participants do not necessarily require these friendships to develop into more intimate relations. The data suggests that regular contact is required for Close Friend relations, suggesting that if this reduces then there is a higher risk of the relationship deteriorating.

On the other hand kin relationships were either in the category of Best Friend or not. This seems to depend on multiple factors, for example; Khadija expressed concerns about cultural boundaries and therefore felt unable to discuss certain intimate issues. Whilst Terry did not express this barrier and felt he could be open with kin, but did not have the luxury of this intimacy with Best Friend. Sean did not have accessible kin to substitute for Best Friend relations. The overall transcripts suggest kin relations are interchangeable and cultural, or personal biases may have an impact on how kin relations are perceived. In addition, kin relations can be used as a substitute where Best Friend relations are not accessible or non-existent, as with Terry.

All the participants interviewed listed that they preferred the phone or F2F contact with Best Friend and Close Friend, however closer inspection of the transcripts revealed that CMC offers the participants a channel to maintain distant relationships and develop new ones. For example, Mark used MSN to maintain his distant Best Friend relations through regular communication, whilst using SNS to promote his music. Mark implied that the phone was preferred in terms of reinforcing his social status, and used SNS to increase social capital. However, he did not use SNS to develop relationships into Close Friend or Best Friend and
seemed to suggest he only valued the site for promoting his music. There was also an indication that the amount of people on his SNS site made it difficult to be intimate with people, as there was a lot of information passing through his website. In addition, he found that MSN allowed him to concentrate on individual relationships.

On the other hand, Tracy with a similar interest in music developed both Best Friend and Close Friend relations that she had met online. However, she explained, she was part of a community of less than 20 people who shared an online room. Which may have made it easier to share and communicate with this set of people. She viewed these relationships as similar to her offline relationships, and would use both online and offline for support. The data reveals that people may be willing to invest time in developing online relationships but through shared interest. Although, for Emily this was not the case, both real world social situations and online social networks made her feel inadequate and lonely, using work colleagues to fill this void.

CMC may facilitate maintaining distant relationships as well as offering an avenue for support, if other means are not possible. Online Close Friend relationship may develop into Best Friend relationships; however for this to happen, the data suggests that F2F contact is needed. CMC may be used to maintain relationships, although not always in the conventional manner. For example, Norah whilst maintaining an indirect link with her father, so she can monitor his activities, this led to detrimental effects on her ability to expand her social circle, restricted for fear of ‘bumping’ into him.

To summarise these findings, the main patterns of use and rationale are identified. There are four categories of user: High socialiser & High CMC users (HH), High socialisers & Low CMC users (HL), Low socialisers & High CMC user (LH), and finally Low Socialiser & Low
CMC user. For HH, typical rationale attributes found included maintaining contact with friends and family, shared interests and general boredom. For HL, we found lack of trust and privacy concerns, limited time and family and work commitments; LH users indicated loneliness, shared interest, and a lack of social skills in the real world. Finally, LL also indicated trust and privacy concerns, lack of time, and family and work commitments.
Chapter Six: Patterns of CMC use in Maintaining Relationships

6.1 Introduction

In the previous chapter we presented detailed narratives on the participant’s network of different strength relationships maintained in the real world and through CMC, and also their motivations for using CMC and SNS. The data for this chapter is frequency of use of technology by the ego relationship ties/strengths. The chapter is interested in patterns of use, and relationship intimacy for different technologies used. An additional dimension of proximity is included for consistency with other chapters; again the relationships are structured according to SBH layers (Dunbar, 1995).

Through quantitative analysis, this chapter seeks to offer further insight into the participant’s patterns and frequency of communication through various CMC technologies. For example, if the mode of communication and frequency depend on the strength of relationship; if there are differences in usage and frequency of CMC for local vs. distant relationships, and which modes of communication participants prefer, and if differences exist between the types of relationships maintained. Activities carried out on social networking sites and the motivations for using the various features are also addressed. The modes of communication are Face to face, Phone, short message service (SMS), Instant Messenger (IM) IM, Social Network Sites (SNS) and Email. The chapter starts with the research question, hypotheses and outlines the research approach. Following this, questionnaire design and data analysis will be provided, and the chapter concludes with a summary and conclusions of the main findings.

RQ.3: What are the patterns of CMC use in maintaining different strength relationships, located and co-located?

The research question enables the formation of a number of hypotheses:
<table>
<thead>
<tr>
<th>H1</th>
<th>Communication patterns significantly differ across CMC modalities by relationship type</th>
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<tbody>
<tr>
<td>H1 (a)</td>
<td>Communication patterns significantly differ across CMC modalities by SBH relationship type – LOCAL</td>
</tr>
<tr>
<td>H1 (b)</td>
<td>Communication patterns significantly differ across CMC modalities by SBH relationship type – DISTANT</td>
</tr>
<tr>
<td>H2</td>
<td>Frequency of CMC use is significantly lower for maintaining local than distant relationship ties</td>
</tr>
<tr>
<td>H2 (a)</td>
<td>Frequency of technology use patterns significantly differ for local for all relationships</td>
</tr>
<tr>
<td>H2 (b)</td>
<td>Frequency of technology use patterns significantly differ for distant for all relationships</td>
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<tr>
<td>H3</td>
<td>Within the context of SNS features, such as wall posts and share photographs amongst others, frequency of use patterns significantly differ by strength of relationship</td>
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<tr>
<td>H4</td>
<td>The proportion of ties by intimacy will the same in real world and online</td>
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### 6.2 Research Approach

In order to address the research question, a quantitative data collection and survey approach was conducted, see 3.10. Hanson, et al, (2005) suggest that a quantitative approach is ideal when the variables to be investigated are not known and where elaboration of findings is required.

### 6.3 Data Analysis

The questionnaire was created through Qualtrics, and this was linked to a web page (www.hatana.co.uk) which provided an introduction to the study and ensured participants confidentiality. The link was sent to all postgraduates at MBS, staff intranet at the Manchester College and all undergraduates at the Manchester College. The link was also posted up Facebook groups. The Questionnaire was online from 1st August 2011 to 1st September 2013. However, the bulk of the data was collected by 1st of August 2012, and only 20 more responses were collected from August 2012 to Sept 2013. The raw data required cleaning through a process of determining nominal and ordinal values from the responses given. For verification, the data was checked by a reliable third party. The data were analysed through Excel and SPSS version 20. 2-Way ANOVA with repeated measures
were used to examine in differences in mean values, frequency tables and means were calculated as appropriate.

### 6.3.1 Processing of Responses

213 online questionnaires were received; some were discarded as they were incomplete or contained errors. Of the remainder, 189 were completed up to part three of the questionnaire. The completion rate was 89%, for the first two parts of the questionnaire, and 66% for the remainder. Part 3 of the questionnaire was designed for participants with social networking accounts.

### 6.3.2 Demographics

Users were asked to record their age, gender, occupation and ethnicity to ensure a cross section of participants were targeted. Analysis of variance tests were carried out to ascertain the differences between the websites and respondent groups. The categories with more than two low volume options were aggregated for the purpose of analysis.

The figures above (6.1, 6.2) demonstrate there was a mix of male and female participants who took part in the study, with males being only slightly less at 42% compared with 58%
females. 18-35 was the predominant age range, which is not surprising considering the study sought to engage participants who were active on CMC/SNS. However, there were a representative number of participants over 35 responding to the questionnaire. T-tests for age effects on gender differences in usage frequency and technology showed no consistent differences.

There was also a balanced mix of ethnic groups of which 53% where white and the rest of ethnic minority groups made up 47%. However, 63% of the participants were employed and a slightly smaller number (37%) were students.

To support the study and help meet the research objectives, a number of statistical tests were performed on the responses from the questionnaire. The findings are described below.

Analysis of question 5 addresses the first hypothesis given below:

- **H1: Communication patterns significantly differ across CMC modalities by SBH relationship type**

We performed a two way ANOVA using repeated measures for the variables relationship-proximity (2) v technology used (6). Frequency of use was the dependent variable. For
variable technology there was a significant main effect: F (5,166)= 101.72 with p<0.001. Thus the technology used has differences in frequency of use patterns. On the Relationship variable, we found there was no significant main effect: F(3,168)=2676, p>0.001 between relationship and frequency of contact method. Considering interaction: there is a significant interaction between the technology used and the relationship F (15,156)=33.98, p<0.001. This means that technology frequency use differs for local and distant relationships. The plot of marginal means below show the relationship variable for the different technology preferred. The preferred technology frequency use is recorded for F2F, Phone and SMS for Kin, Best Friend and F, at the origin of the plot. Email, SNS and MSN are less frequently used.

The Plot shows (figure 6.1) that Kin, Best Friend and F follow a similar pattern of frequency of use. However, acquaintance from the plot follow a different pattern of usage; hence the interaction can be explained from the acquaintance plot line, noting that the other three are almost parallel.

![Relationship type frequency of technology use](image)

Figure 6.1: Mean frequencies for all relationship type and technology use
H1 (a) Communication patterns significantly differ across CMC modalities by SBH relationship type – LOCAL

A 2-way ANOVA using repeated measures was performed for local relationships, with relationship (4) and technology (6) the preferred rating for each communication method, 1-6, with 1 being the most preferred, and 6 being the least. Frequency of use was the dependent variable. From the results it was found that relationships were not significant; technology was significant with \( F(5, 850) = 192.92 \), and \( P < 0.001 \). Also there was interaction with \( F(15, 2550) = 36.76 \), and \( P < 0.001 \). The mean ratings shown in the figure 6.1 indicate that F2F is most popular medium for the first three relationship types: Kin, Best Friend, Close Friend. While MSN has low popularity for all relationships ties. All technologies appear to be used equally for acquaintances (see figure 6.2).

![Preference of technology for Local Relationships](image-url)

Figure 6.2: Mean frequencies for technology use for Local Relationships
H1 (b) Communication patterns significantly differ across CMC modalities by SBH relationship type – DISTANT

The same exercise was carried out for distant relationships using the 2-way ANOVA with repeated measures. From the results it was found again that technology was significant with F (5,850)=27.41 and, P<0.001; relationship was not significant. However interaction was present with F (15,2550)=13.53, and P<0.001. The mean rankings shown in the figure 6.2 indicate that phone is most popular medium for kin and Best Friend ties and SMS preferred with: Kin, Best Friend, Close Friend. MSN has low popularity for all relationships ties. SNS and Email is preferred with acquaintance ties. Also observed is the similarity in patterns for local acquaintances and distant acquaintances shown in figure 6.3.

![Preference of technology for Distant Relationships](image)

Figure 6.3: Mean frequencies for technology use for Distant Relationships
6.4 Relationship Proximity

In this section we address the hypothesis below

- **H2: Frequency of technology use patterns significantly differ for local and distant for all relationships**

A 2-way ANOVA with repeated measures was performed, with factors proximity (2) and technology (6), with frequency of use being the dependent variable.

There was a significant main effect for proximity (Distant v Local) on frequencies, \(P<0.001\), \(F(1,188)=56.3\), and a significant main effect for technology (F2F, Phone, SMS, Email, SNS, MSN) \(p<0.001\), \(F(5,940)=53.3\). In addition, the interaction between proximity and technology was significant \(F(5, 940) = 174.5, p < 0.001\).

In summary the results show that proximity and the method of communication have a significant effect on the frequency. We also found there is significant interaction present between method of communication and distance.

Figure 6.4: Mean frequencies for technology use
Evidence of interaction can be seen in figure 6.4. The interaction can be explained when we consider modes of communication. We observe that as the means for Local decrease to the middle point (Email), means for Distant increase. SNS is a popular method of communication for distant relations. Technologies, such as Facebook have a clear role to play in maintaining distant relationships; popular for posting photographs, wall postings and update messages. F2F is not possible for distant relations, whilst F2F and Phone were favoured for local alters, see figure 6.2. SMS for both local and distant is similar for email.

Continuing with questions 6 to 13, we performed a two way ANOVA for Technology (6 types) x Relationships (4 types) for Local, and for Distant proximity; frequency of use was the dependent variable.

6.4.1 Local Relationships

H2 (a): Frequency of technology use patterns significantly differ for local for all relationships

A two way ANOVA with repeated measures was performed: Relationship x Technology. We found that there was a significant main effect on Relationships (p < 0.001 and F (3, 309) = 48.528) and on Technology, (p<0.001, F(5,515) = 134.3). In addition, the interaction between relationships and technology was significant (p < 0.001 and F (15, 1545) = 51.70).

In summary, we can state that for local contact, both relationship types and the categories of technology influence the frequency of using a particular mode of communication. Also, differences exist on frequencies with whom participants communicated with (Kin to Acquaintance).
Figure 6.5 shows the interaction: it is noted that F2F is the dominant means of communication for Kin, and is popular with Best Friend relationships. Friends and acquaintances have similar frequencies for F2F; this could be attributed to social contexts, such as work, university or recreation where both Friends and Acquaintances meet either formally or informally. Kin and Acquaintance are low on the scale of contact using the phone, possibly due to kin accessibility abroad and weak tie to acquaintance. The phone has a high frequency with Best Friend, and high values for F2F and SMS. Equal frequency can be seen for email for all relationships. The low values for SNS, which includes FB, can be explained by the local proximity, with many opportunities for F2F encounters.
6.4.2 **Distant Relationships**

**H2 (b): Frequency of technology use patterns significantly differ for distant for all relationships**

There was a significant main effect on Relationships ($p < 0.001$ and $F(3, 462) = 3525.0$)) and technology ($p <0.001$ and $F(5,770) = 819.3$). In addition, the interaction between relationships and technology was significant ($p < 0.001$ and $F(15, 2310) = 110.1$).

In summary, for distant contacts, we can state that relationship types and the categories of technology influence the frequency of using a particular mode of communication.

![Figure 6.6: Mean frequencies for technology use (distant)](image)

Figure 6.6 shows that Friend means are higher than all other communication technology types, indicative that their frequency of use is high compared with other relationships. We observe, comparing the two graphs: Local and Distant, that email use converges for all relationships, and all technologies for distant alters have similar usage frequencies. One explanation for the high mean values for friend is that friends require higher levels of
maintenance for continuing a distant relationship. The high values seen for friend (figure 6.4) can be explained from FB as a popular tool for maintaining, in the context of this study, sympathy group (Close Friend). This is consistent with results from chapter 4, showing that CMC is popular for maintaining close friend relationships.

6.4.3 **SNS wall posts**

In this section we address the hypothesis:

- **H3: Within the context of SNS features, such as wall posts and share photographs amongst others, frequency of use patterns significantly differ by strength of relationship**

We were interested in identifying any differences between types of Facebook feature use: Wall Posts, Pokes, Private messages, share photos, news feeds, application (games, video) and relationships (Kin, Best Friend, F, Acquaintance). For example, is sharing photographs more popular with kin/Bf relations or with acquaintances? Also, are private messages used more frequently with Best Friend relations?

We performed a two way ANOVA with repeated measures to identify differences for the two factors (feature use and relationships), with frequency of use the dependent variable.

From the two way ANOVA, we found a significant main effect for relationships ($p < 0.001$, and $F (3, 564) = 17.02$), and features, with ($p < 0.001$ and $F (6, 1128) = 31.2$). In addition, there was a significant interaction between SNS features and Relationship ($p < 0.001$ and $F (18, 3384) = 6.026$). This interaction is attributed to acquaintances, with values differing markedly from the other three.
Figure 6.7 shows the interaction for the relationships and features. Interaction is not consistent across all features. Wall posts, private messages, photos and news are all popular features. Also of interest is that, apart from private messages, the other features are active broadcast and can be shared amongst their social group.

### 6.5 SNS Users

The following section presents data collected on those participants possessing a social network account. The third part of the questionnaire asked whether users had a social network account, those who selected ‘no’ were thanked, and informed they had completed the questionnaire. Those who selected ‘yes’ were asked a series of further questions. In addition to asking which account the respondent subscribed to, we were interested in patterns of communication when comparing non-media use with real-life communication.
This question is relevant when considering work by Dunbar (1998), and others, and helps in trying to form new ideas on observed patterns in SNS usage.

Initially they were asked which SNS site they had signed up to. The majority of participants had signed up to FB (see figure 6.8), with a smaller number signing up to MySpace and LinkedIn. Participants were able to select more than one option. Twitter was among ‘other’ selected as SNS choice.

<table>
<thead>
<tr>
<th>SNS</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>MySpace</td>
<td>27</td>
</tr>
<tr>
<td>FB</td>
<td>107</td>
</tr>
<tr>
<td>LinkedIn</td>
<td>23</td>
</tr>
<tr>
<td>Bebo</td>
<td>5</td>
</tr>
<tr>
<td>Orkut</td>
<td>4</td>
</tr>
<tr>
<td>Other</td>
<td>20</td>
</tr>
</tbody>
</table>

Table 6.1: Number of types of SNS signed up to

![Figure 6.8: Types of SNS participants signed up to](image)

The participants were asked their motivations for signing up to a SNS site and they were offered several categories to choose from; multiple choices were possible.
The majority of participants stated the reason for signing up to SNS (see figure 6.9) was to keep in touch with existing friends, whilst the least popular reason was to make new friends. However, when further questions were asked about meeting new friends or making new friends through SNS a contradiction is seen; the table (6.2) below shows 52% of participants affirming they have met new friends through SNS. The anomaly could be explained if we consider these newly acquired SNS friends, can be identified as weak ties and may not be sustainable in the long term. However, it is unclear the length of friendship, and this makes any firm conclusions difficult to justify.

Table 6.2: % No. of meeting new friends through SNS

<table>
<thead>
<tr>
<th>Have you met new friends through SNS?</th>
<th>% Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>52%</td>
</tr>
<tr>
<td>No</td>
<td>48%</td>
</tr>
</tbody>
</table>
Given that participants stated they held an SNS account, a follow on question asked participants how initial contact was initiated with these new friends, and the reason for starting the friendship. The data is displayed in table 6.3 and figure 6.11. Noting that the data is not mutually exclusive, and participants can select multiple choices, 60% of the participants stated they met new friends through their mutual friends online, and to a lesser degree through mutual friends offline. This observation is a reflection of social media use, where users are able to build social capital with relative ease. However, this is not the primary motivation for using the technology. Higher motivation occurs with maintaining existing friendships.

Table 6.3: % No. of how participants made new friends through SNS usage

<table>
<thead>
<tr>
<th>Did you meet through:</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mutual Friends Online</td>
<td>60%</td>
</tr>
<tr>
<td>Mutual Friends Offline</td>
<td>35%</td>
</tr>
<tr>
<td>Similar Interests</td>
<td>38%</td>
</tr>
<tr>
<td>Friend Request</td>
<td>49%</td>
</tr>
<tr>
<td>Group Invitation</td>
<td>35%</td>
</tr>
</tbody>
</table>
H4: The proportion of ties by intimacy will be the same in real world and online relationships.

Significant positive correlation was found between the real life ties and SNS ties, with $r=0.99$. Thus, SNS ties are proportionate to real life ties. These findings can be related to results from question 5, where we observed the frequency of technology use and
relationship type. We found that SNS usage was considerably lower than other modes of communication. This would indicate that, although there may be an equal number of ties, communication patterns will be lower than real life relationship patterns.
### 6.6 Summary

<table>
<thead>
<tr>
<th></th>
<th>Factors/Test</th>
<th>Dependent Variable</th>
<th>Main Effects</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>Relationship*Technology</td>
<td>Preference</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>H1(a)</td>
<td>Relationship*Technology (LOCAL)</td>
<td>Preference</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>H1(b)</td>
<td>Relationship*Technology (DISTANT)</td>
<td>Preference</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>H2</td>
<td>Proximity*Technology</td>
<td>Freq Use</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>H2(a)</td>
<td>Relationship*Technology (LOCAL)</td>
<td>Freq Use</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>H2(b)</td>
<td>Relationship*Technology (DISTANT)</td>
<td>Freq Use</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>H3</td>
<td>Feature*Relationship</td>
<td>Freq Use</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>H4</td>
<td>Correlation between Real life ties*SNS ties</td>
<td>N ties</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>

In *H1* we hypothesize that communication patterns differ across CMC, and egos preferences differed depending on whether their alters were based locally or distant. We found that F2F was the preferred method of communication for all relationship types; MSN was ranked lowest for both proximities. Unsurprisingly F2F was preferred for kin local and the phone distant, this was the same for Best Friend and Close Friend, although SMS was also preferred for Close Friend local and distant. Acquaintance relationships show least variation in choice of technology used.
When we tested the actual use of CMC, we hypothesized that the frequency of CMC use for maintaining local relationships would be significantly lower than distant relationships (Hypothesis H2). Our results showed there was a significant difference, in that F2F was mainly used for local relationships, particularly for kin and Best Friend relationships, whilst unsurprisingly-least for distant. The phone was used more for local, and email was used equally for all relationships both locally and distant.

The table (6.4) highlights the differences in frequency of CMC use and compares these differences across proximities.

<table>
<thead>
<tr>
<th>Proximity</th>
<th>Most frequent Communication modality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local</td>
<td>F2F</td>
</tr>
<tr>
<td>2</td>
<td>SMS</td>
</tr>
<tr>
<td>3</td>
<td>Phone</td>
</tr>
<tr>
<td>4</td>
<td>Email</td>
</tr>
<tr>
<td>5</td>
<td>SNS</td>
</tr>
<tr>
<td>6</td>
<td>MSN</td>
</tr>
<tr>
<td>Distant</td>
<td>SNS</td>
</tr>
<tr>
<td>2</td>
<td>SMS</td>
</tr>
<tr>
<td>3</td>
<td>Email</td>
</tr>
<tr>
<td>4</td>
<td>MSN</td>
</tr>
<tr>
<td>5</td>
<td>Phone</td>
</tr>
<tr>
<td>6</td>
<td>F2F</td>
</tr>
</tbody>
</table>

F2F communication is relatively easy for local relationship maintenance; thus, it is expected to be the most frequent form of communication modality, and the least frequent for distant relationships (Table 6.4). SMS is the next popular communication modality, and this may be due to it being fairly cheap, convenient, personal and instant, and is used with relationships
both local and distant. Phone seems to be the next best form of communication for local relationship types. In contrast, for distant relationships F2F becomes the most infrequent mode of communication and is replaced with SNS for all relationship types, which is quite interesting as it is the least preferred method of communication. SNS such as Facebook has a clear role to play in maintaining distant relationships (Ellison et al, 2010). It is a popular way for keeping up to date with ties through wall posts, posting photographs, offering information and updates on the activities of individuals (boyd & Ellison, 2007).

When we look at frequency of CMC with relationships ties the table (6.5 provides a clearer picture across relationship types for local.

Table 6.5: ranking the order of frequency of CMC use for Local relationship

<table>
<thead>
<tr>
<th>Local</th>
<th>Relationship types</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kin</td>
<td>Best Friend</td>
</tr>
<tr>
<td>1</td>
<td>F2F</td>
</tr>
<tr>
<td>2</td>
<td>SNS</td>
</tr>
<tr>
<td>3</td>
<td>Email</td>
</tr>
<tr>
<td>4</td>
<td>MSN</td>
</tr>
<tr>
<td>5</td>
<td>SMS</td>
</tr>
<tr>
<td>6</td>
<td>Phone</td>
</tr>
</tbody>
</table>

As expected F2F communication is frequently used for Kin, with SMS for friends. In the case for acquaintance F2F is also expected, as it would include colleagues, university peers and individuals from informal social events. The popularity of SNS use for Kin seems surprising but this may relate to posting of photographs (H3).
Table 6.6: ranking the order of frequency of CMC use for Distant relationship

<table>
<thead>
<tr>
<th>Kin</th>
<th>Best Friend</th>
<th>Close Friend</th>
<th>Acquaintance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SNS</td>
<td>Phone</td>
<td>SNS</td>
</tr>
<tr>
<td>2</td>
<td>MSN</td>
<td>SMS</td>
<td>SMS</td>
</tr>
<tr>
<td>3</td>
<td>SMS</td>
<td>SNS</td>
<td>Email</td>
</tr>
<tr>
<td>4</td>
<td>Email</td>
<td>Email</td>
<td>MSN</td>
</tr>
<tr>
<td>5</td>
<td>Phone</td>
<td>MSN</td>
<td>Phone</td>
</tr>
<tr>
<td>6</td>
<td>F2F</td>
<td>F2F</td>
<td>F2F</td>
</tr>
</tbody>
</table>

Furthermore, SNS for Kin is likely to be appropriate mode for distant communication (6.6) as family members are able to keep up to date with distant relations without cost or effort. This form of communication is usually devoid of explicit emotional content and may serve a purpose to reaffirm that the relationship exists, rather to exchange particular rewards during interaction (Duck et al, 1992). Research in general also suggests that SNS is used to articulate previously established relationships (boyd & Ellison, 2007), which is in agreement with our study. However, SNS is also frequently used for Close Friend and Acquaintance and research suggests this is also true, but it further highlights that the use of SNS is not used for connecting with strangers, but rather with existing real world relationships (H4). SNS such as Facebook are unlike chat rooms or forums where similar interests are the focal points for communicating (e.g. natural therapy) with complete strangers (Ellison et al, 2010); hence FB allows communication with familiar friends as well as kin (Mayer & Puller, 2008).

For Best Friend relationship ties, the phone is the most frequent mode of communication; this seems to correlate with the definition of Best Friend in terms of SBH. Best friend is someone who you can call upon in an emergency or a crisis. The phone allows for audible non-verbal cues to interpret the context of the conversation (Shklovski et al, 2008). Therefore the phone may be suited to more intimate conversations, maintaining higher
levels of emotional closeness, whilst other forms of CMC may delay the time to respond and may limit its ability to support; and therefore, over time, hinder the relationship’s emotional closeness (Shklovski et al, 2008). Researchers suggest that much of the relational maintenance for mature intimate relationships tend to move from F2F interaction to phone calls, whether local or distant, due to time constraints in adulthood (Nussbaum, 1994; Smoreda, Z. & Thomas, 2001).

Within SNS, most features are used similarly by all relationship types, apart from photos sharing and private messaging, where acquaintances show lower frequency of use. Use of SNS agrees with the literature and is used to primarily to maintain existing relationships, and more intimate forms of communication are used for closer relationships. Within the context of the defined relationships, a correlation was found between average number friends in real life and average number of friends on SNS for each relationship tie, so it appears about half of the real life relationships are also online for our participants, across all the levels of intimacy apart from kin.

The data results from this chapter and implications will be discussed in further detail in Chapter 8.
Chapter Seven: Maintaining Distant Relationships using CMC

7.1 Introduction

This chapter describes a diary study used to record communication from a group of UK Diasporas with friend and kin in the North West Frontier Province (NWFP) of Pakistan. The motivation for using diaries, a breakdown of the diary study, and the pilot study are presented. This is followed by results of the study, concluding with a discussion of the findings.

My parents are among the Pashtun diaspora, and as far as the 1960’s the main form of communication was the written letter. However due to literacy levels, letters were infrequent, and when received read out by a member of the tribe. The letters included little personal information, but concerned wellbeing or general formalities. By the 1970’s the letters evolved to tape recorded messages, offering the opportunity to hear the voice, tell long stories and notify matters about circumstances at home. As a child I sat with my mother who would ask me to repeat her narrative of greetings and general formalities. The tape recordings were posted to the UK from NWFP and vice versa. On occasions, the sound of music at a wedding was recorded, or the content would be the wailing cries at funerals, allowing my parents to hear and engage in the experience. These recordings would be listened to several times, offering my parents comfort and a connection to their families. With the advent of phone cards, reducing the cost of calls and phone lines subsequently installed in the North West Frontier, the phone became a popular mode of communication, and allowed for synchronous exchanges. This form of communication is still the most popular mode for the Pashtun diaspora, as shown in our study, and seems to be the preferred option for maintaining intimacy with kin ties. The level of literacy has improved; however it is still very low compared to developed countries, in particular for women and
older adults. Lack of literacy will have an impact on using text-based mediums and explains reasons for the lack of current CMC use. SMS is also limited, as it requires text.

The diary study shows that communication content is mainly formal, and although personal issues or difficulties are discussed, the main topics are health and finance, politics and safety, mirroring the Pashtun Diaspora’s real world relationships and communication with kin ties, and in particular with older family members, all conducted in a formal manner. The formality adheres to the cultural and tribal laws of the Pashtun people.

7.2 Objectives

This chapter seeks to investigate RQ4: ‘How is CMC utilised for geographically remote intimate & personal relationships’. More specifically, the research objectives seek to explore the types of information exchanged, choice of technology, and if this differs depending on the type of relationships. Thus the following two objectives were defined:

1. What type of information (trivial, support, advice, general formalities) is being exchanged when using various CMC technologies (Phone, Email, Chat, and Social Network Sites)?

2. Can we distinguish between relationship ties based on the modality of the communication technology (Phone, Email, Chat and Social Network Site) use?

3. How do Kin and Friends communicate over distance?

The literature demonstrates the need for further investigations to enable a better understanding of whether the Diaspora communities are using CMC to maintain their interpersonal relationships; and whether the type of information exchanged is different (intimate, trivial, advice, general formalities) from information being exchanged face-to-face. In addition, it will be valuable to elucidate whether there are consistent findings with other intercultural studies use of CMC in maintaining relationships at a distance.
7.3 Sampling procedure

The participants were ethnically Pashtun, a convenience sample known to the author and fulfilled certain requirements:

- Employed or education at least to undergraduate level
- Living in the UK as a Diaspora
- Good knowledge of CMC in the UK and had experience of using CMC to communicate with Pakistani network
- Communication with friends and family in the North West Frontier Pakistan

Questions may be raised on why this particular diaspora was chosen, and not another cultural group. The rationale was convenience and availability of this group. The scope of the study was not a comparison of cultural groups, but rather how a Diaspora group interacts with CMC.

A total of 25 participants responded to an email requesting volunteers to participate in this study. Out of the 25, 10 Pashtun Diaspora participants were selected as they could commit to carry out the diary study over a four months period. As with the other studies, the names of the participants have been replaced with pseudonyms to protect the participants right to privacy and anonymity. In addition, where the participants refer to friends or family these names have also been either changed or only initials used.

7.3.1 Demographic profile

The participants age ranged from 30 to 45; they were employed professionals, and had lived in the UK for at least 5 years, with a maximum of 10 years. Participants had at least a Bachelor’s degree and were originally from Peshawar in Pakistan. Only male participants responded, possibly because very few women from the NWFP leave home alone for study or work. The selected sample was based on the participants living abroad, away from their families. This particular group provided the study with communication episodes recorded in
the diary. The family of each participant was living under political and economic turbulence in Pakistan, NWFP. This situation offered an opportunity to study participants’ use of CMC and how the technology supported communication within the cohort.

The table below (table 7.1) provides an overview of the participants (actual names have been replaced with pseudo names for anonymity).

<table>
<thead>
<tr>
<th>Name</th>
<th>Age</th>
<th>Occupation</th>
<th>Years Residing in the UK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bilal</td>
<td>31</td>
<td>PhD Student</td>
<td>5 years</td>
</tr>
<tr>
<td>Tariq</td>
<td>32</td>
<td>Programmer</td>
<td>6.5 years</td>
</tr>
<tr>
<td>Omar-Saeed</td>
<td>38</td>
<td>Doctor</td>
<td>8 years</td>
</tr>
<tr>
<td>Yusef</td>
<td>30</td>
<td>Auditor</td>
<td>5 years</td>
</tr>
<tr>
<td>Shafiq</td>
<td>43</td>
<td>Researcher</td>
<td>9 years</td>
</tr>
<tr>
<td>Rasheed</td>
<td>33</td>
<td>IT consultant</td>
<td>7.5 years</td>
</tr>
<tr>
<td>Mohammed</td>
<td>45</td>
<td>Doctor</td>
<td>10 years</td>
</tr>
<tr>
<td>Naveed</td>
<td>36</td>
<td>Masters Student</td>
<td>5 years</td>
</tr>
<tr>
<td>Shahid</td>
<td>30</td>
<td>Doctor</td>
<td>10 years</td>
</tr>
<tr>
<td>Sulayman</td>
<td>34</td>
<td>Nurse</td>
<td>6 years</td>
</tr>
</tbody>
</table>

7.4 Participants

The UK hosts approximately 100,000 Pashtuns, making it the largest Pashtun Diaspora in the West. The Pakistani Government has been promoting the use of ICT and the internet within Pakistan since 1998 (Ramzan, 2004); therefore computers, in addition to telephones and mobile phones have been in use for more than two decades. The participants’ family and friends are from upper and middle class backgrounds and live in the more affluent parts of Peshawar, which is the most developed city in the NWFP.

The Pashtun Diaspora originates from both sides of the Afghan and Pakistani borders, commonly known as the ‘tribal belt’. Over the past decade the tribal belt has faced several political, social and environmental disasters and continues to face challenges. This Diaspora
group may experience various difficulties in maintaining their network of relationships and their use of technology. One aspect is the constraint on energy use in Pakistan (Mahmud, 2000) and the subsequent electricity load-shedding occurring on a daily basis, which may at times restrict the use of technologies. However, generators (using diesel oil) are used in many homes to overcome the shortage of electricity. Notwithstanding these constraints, the CMC technologies are used for communicating with family and friends.

A further interesting context the participants offer to this research is the tribal laws and traditional boundaries, which are indigenous to the Pashtun people. These traditions are known as ‘Pushtunwali’, which date back to ancient pre-islamic times (Cassidy, 2012), and are practised widely by the Pashtun diaspora (Erinn, 2003). These could have a significant impact on the content of communication and mode of CMC. It is therefore noteworthy to have an overview of these laws. There are eight particular unwritten laws that the Pashtuns and Pashtun Diaspora adhere to:

1. Hospitality (Melmasti) – Hospitality is a significant aspect of the Pashtun culture, given regardless of the race, religion, and position of the guests, or personal economic status.

2. Protection (Nanawatai) - is offering asylum to one who seeks it from enemies or danger. Asylum seekers are protected at all costs, no matter who they are. For example, opposing forces like Russian soldiers during the Afghan and Russian war sought asylum and were protected. Consequently many Russian soldiers settled in Afghanistan after the war, converting to Islam and marrying pashtun women. A more recent case was that of a US Navy SEAL ambushed by Taliban fighters, wounded, he evaded the enemy by asking for protection and thus was aided by members of a Pashtun tribe who took him to their village. The tribal chief protected him from other tribes, until US forces came for him.
3. Justice (Badal) - refers to revenge and upholding ones honour. A verbal insult has been known to cause bloodshed. Badal can lead to many generations of blood feud with lives being lost. Therefore Pashtuns are very sensitive on conversational content to avoid any potential insults.

4. Bravery (Turah) - A Pashtun man is required to defend his land, property, family and women from intrusions.

5. Loyalty (Sabat) is paid to one's family, friends and all tribal members, which includes paying respect (through physical or verbal means) for celebrations and condolences. Pashtuns are at risk of being shunned from the community if found disloyal, as this would be a matter of shame for their families and themselves.

6. Righteousness (Imandari) – Pashtuns are required to demonstrate that he/she strives for good in thought, word and deed. Pashtuns are required to conduct themselves respectfully to people, animals and the environment around them. Pollution of the environment or its destruction is against the tribal code of conduct.

7. Trust in God (Isteqamat) – having full faith in God and predestination, accepting ones share in life by demonstrating gratitude and not complaining.

8. Courage (Ghayrat) – courage for a Pashtun is demonstrated through respecting themselves and others, through clothing, speaking graciously and respecting others, including family, friends, acquaintances and strangers.

9. Protection of women (Naamus) - Defending the honour of women from verbal, physical abuse, inappropriate language or harm from men.

10. Honour (Nang) – Pashtuns are required to defend the weak around them, such as neighbours, elderly, disabled and children (Erinn, 2003).

The above laws are strict regulations on interaction and communication with others, which will influence the types of relationships maintained. Furthermore the cultural boundaries will
impact on conversational content and the following results will highlight how these affect CMC use and communication episodes.

7.5 Data Analysis

Data was collected using a diary over four months from November 2010 to January 2011. Participants were asked to record their patterns of communications on a daily basis with their friends and relatives based in Pakistan. The data was recorded with a custom template using Microsoft Word. These diaries were structured with specific pre-defined categories, such as the number of contacts made over the course of the month, length of conversations, number of friends and kin, conversation content, and who they were communicating with (Chin, et al., 1992). These diaries were coded using the open coding method and thematic analysis as with the interviews in chapter 5.

All participants lived in the UK throughout the study, and contacts (Family/Friends) were based in Peshawar in the North West Frontier Province of Pakistan.

To gain further insight and clarification on the diary entries, follow up interviews of the 10 participants took place using the telephone in February and March 2011. To help identify communication partners, we asked participant’s to identify relatives and friends using initials. The friend relationships were identified using Best Friend (best friend), close friend (Close Friend) or Friend (F).

7.6 Results

This section will address objective 1:

1. What type of information (trivial, support, advice, general formalities) is being exchanged when using various CMC technologies (Phone, Email, Chat, and Social Network Site)?
Participants reported their UK network (see figure 7.1); consisted on average 92% friends and acquaintances. The remaining percentage is made up of kin: 1%, close friends: 5% and Best Friends: 2%. Communication with the UK network was primarily face-to-face, via mobile phone, using both voice and text. In contrast, the relationships maintained with the alters based in the NWFP consisted of kin and closer relationships.

![Typical UK Network](image1)

![Typical Pakistan Network](image2)

**Figure 7.1:** Participants UK (a) and Pakistani (b), networks respectively

The pie chart of the Pakistan network implies a strong support group, with Kin predominant, and acquaintances significantly less in comparison to the UK network. NB: The pie charts only represent people the participants communicated with during the study. Therefore they may have other relationship ties in the UK and Pakistan.

The pattern for the UK network approximates to Dunbar’s 2008 SBH, with 5 best friend and approximately 10 close friends. A comparison of the two charts raises some interesting observations. If we look at the Pakistan network, a large proportion of kin contacts are present, contrasting with a small percentage of kin contacts for the UK network.
Furthermore, it could be argued that the ties appear stronger overall, noting that acquaintances form a small proportion within the Pakistan network.

Table 7.2 shows the average number of kin and friends contacted frequently by the participants in the diary study, communicating with their network contacts in Pakistan over a four-month study period. The table shows the average frequencies of communication were higher for kin compared to friend group. This is not surprising, as figure 1 showed that available kin contacts were 55%. There was a slight increase over December, but this is not startling considering the festivities during this month (Eid, Christmas and New Year).

Table 7.2: The average number of kin and friends contacted frequently over four months

<table>
<thead>
<tr>
<th>MONTH</th>
<th>KIN</th>
<th>FRIEND GROUP</th>
</tr>
</thead>
<tbody>
<tr>
<td>OCT</td>
<td>4.1</td>
<td>3</td>
</tr>
<tr>
<td>NOV</td>
<td>3.8</td>
<td>2.9</td>
</tr>
<tr>
<td>DEC</td>
<td>6.5</td>
<td>5.4</td>
</tr>
<tr>
<td>JAN</td>
<td>3.7</td>
<td>3.1</td>
</tr>
</tbody>
</table>

7.6.1 **Themes**

As part of this study, we identified themes within the communication carried out with the Pakistan cohort. The themes that arose from the diaries were categorised into six easily identifiable sections: Politics, Emotional Support, Individual Advice, Gossip, General Formalities and Other. To reduce the number of distinctive themes, it was deemed logical to create titles containing pertinent items for discussion. These themes were derived following an analysis of the diary data. They represent the most popular frequencies from the conversation content. The titles were arbitrary selected but are consistent with the themes. General formalities are the most frequent topic of conversation overall for both kin and friends shown (table 7.3).
Table 7.3: Themes of communication content for both kin and Friend

<table>
<thead>
<tr>
<th>Politics – 18-2%</th>
<th>Emotional Support – 15.0%</th>
<th>Individual Advice – 13.7%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Military presence</td>
<td>Economic</td>
<td>Health</td>
</tr>
<tr>
<td>Government policies</td>
<td>Education</td>
<td>Education</td>
</tr>
<tr>
<td>Governance of local area</td>
<td>Personal relationships</td>
<td>Personal relationships</td>
</tr>
<tr>
<td>Pashtun laws</td>
<td>Health</td>
<td>Family relations</td>
</tr>
<tr>
<td>Changes in government policies</td>
<td>Safety</td>
<td>Family relations</td>
</tr>
<tr>
<td>Safety due to bombings</td>
<td>Family relations</td>
<td>Travel</td>
</tr>
<tr>
<td>Bomb Blast</td>
<td></td>
<td>Visas</td>
</tr>
<tr>
<td>Suicide bombings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deaths by military action</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gossip – 12.7%</td>
<td>General formalities – 32.9%</td>
<td>Other – 7.5%</td>
</tr>
<tr>
<td>Personal relationships</td>
<td>General well being</td>
<td>Uploading or sending photographs via</td>
</tr>
<tr>
<td>Family issues</td>
<td>Birthdays</td>
<td>email or FaceBook</td>
</tr>
<tr>
<td>Friends circumstances (education,</td>
<td>Conduleses</td>
<td>Sending electronic cards</td>
</tr>
<tr>
<td>relationships, economics, difficulties) updates</td>
<td>Festival wishes</td>
<td>Sending letters for official purposes</td>
</tr>
<tr>
<td>Colleagues from work and study</td>
<td>Update personal profiles (SNS)</td>
<td>(Visas/work)</td>
</tr>
<tr>
<td>institution updates</td>
<td>Making general comments on other peoples SNS</td>
<td>Facebook Wall posts</td>
</tr>
<tr>
<td>Weddings</td>
<td>profiles</td>
<td></td>
</tr>
<tr>
<td>Festivals</td>
<td>Arranging travel</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Organising events (weddings, birthdays)</td>
<td></td>
</tr>
</tbody>
</table>

Participants were asked to log their contacts for friends and Kin. From figure 7.2 below, we see that friends dominate communication themes for advice, gossip, general formalities and other. In contrast, the support theme is dominated by Kin, whilst politics was of equal frequency, indicating equal concern amongst friend and kin for political discussion. The Pashtun culture has very strict tribal codes of conduct, and a unique social etiquette exists within the society. The exchanges listed in table 7.2 form part of the cultural observations, such as condolences that exist amongst the Pashtun. To explain the dominance of general formalities in figure 7.2, they need to be understood in a cultural context. The topics may appear trivial to an outside observer, however in this context, they indicate strong emotional
ties amongst the tribe’s people following their code of conduct. For example, Omar Saeed, a 38 year old Doctor talked about having to contact extended family regarding a death:

"I phoned my uncle to give condolences regarding his son in laws, sister’s husbands’ death. We talked about how the death occurred and how the family were taking the news; I offered my support and carried out my duty of phoning. We also briefly mentioned about other family members well-being”

Omar offered condolences regarding an extended family member of his uncle, although he had probably a distant relationship with Omar, it was still deemed necessary, as Omar explains, he was obligated out of duty whilst adhering to the “loyalty” law.

Another example can be seen where Yusef was expected to be hospitable to a family guest, in spite of the fact that he wasn't present or in the same country at the time:

"My father’s friend travelled from America to Peshawar and he visited my parents whilst there. My father told me I must call when he was there to make sure I spoke with him and also thank him for the visit. I should also ask if he or his family required anything from the UK”

Although this would come under the category of general formalities, it is clear to see the expectation and the lengths the families go to for the ‘hospitality law’.

![Figure 7.2: Percentage of topic content from Oct to Jan](image-url)
Figure 7.3, shows the totals of average for the relationship type: Friend, Close Friend, Best Friend and Acquaintance. We see that the frequency increase, attributed earlier to Eid, is consistent for each relationship type. Communication levels hold fairly steady apart from festivities; however, contacts ceased with acquaintances in the second month that could be attributed to the political crises. In that month (without acquaintance), a similar pattern of communication is maintained to the previous and the final month. Contact with acquaintances appears less constant compared to the other relationship ties.

![Figure 7.3: The average number of friends/close friends/best friends/acquaintances contacted over four months](image)

Figure 7.4 displays the frequencies of communication for Kin and Friend group. Consistent with earlier comments, frequency of contact for Kin is dominant for all months. A peak can be seen with kin in October; when there were frequent media reports of political unrest in the NWFP of Pakistan. Following these reports, entries made in the diaries recorded the social and political unrest. For example, participants discussed safety, military action, and the closing of schools; see the following excerpts from diary entries.

Yusef: "I talked to my mother about the bomb blast that happened a day or two ago, we discussed the instability in my home town and what was going to happen in the future. I insisted to my family only to go out if it was very necessary, because it was too dangerous. I spoke to my father too, and we talked about the political situation and what the military was doing about the situation, at the moment they are just making people very nervous"
Bilal: "I spoke to my father and he was discussing a local girls school being closed for while, he was angry and so was I, my nieces could not go to school and the situation is just getting ridiculous. My father blamed the Pakistani military and government for exacerbating the situation. He said, they have never cared before about the state of Peshawar, they only care now because the Americans and British are telling them to do something about the terrorists... there were no terrorists until recently, when the Americans went into Afghanistan.. We agreed it was a big mess..”

The number of contacts made to family decreased over the four months, which can be expected, given the improving political situation. In contrast, Figure 7.5 shows a different distribution of the frequency of contacts made with friends. Conversation content with friends during October was also focused on the political situation and safety concerns.

Shafiq: "I spoke with my best friend Mahmoud about the government response to the troubles. We talked about the media reports and the inconsistencies between the reported news and the facts. We also spoke about our opinions on solutions and what the locals were saying about the troubles”

Tariq: I spent a long while arguing with my close friend Abdullah about the Pakistani military intentions and their unfair treatment of Pashtuns. He disagreed with me and blamed the Pashtuns for being so slow to develop into the modern world. But I explained to him, without the proper support and education, of course the Pashtuns will be left behind, it is the Pakistani government responsibility to develop the tribal areas, not destroy them”

Kin discussed personal implications of the political situation on the family, whilst the friend conversations discussed political implications.

Beyond October diary entries continued to include safety concerns, although the political crisis was not significantly discussed. The further increase in January may be attributed to New Year greetings.

The difference between the two distributions can be explained. The exceptionally high peak in October with kin can be attributed to the political unrest, which started to settle and ease through Nov to Jan, when normal communication patterns resumed. If we consider a friend tie, events such as Eid are not subject to the large increases in communications observed with Kin. A further explanation for the changes in frequency with kin is that these contacts vary, and are possibly dependent on the emotional needs of the participants involved. The
pattern of friend communication frequency is more constant and maintained at a level which is less intimate, evidenced from the diary entries shown below.

"I received a message from my brother to call my mother as she was worried that I did not call in a week. I called my mother and told her not to worry that I was fine and everything was well. I did not want to worry her as it could have impacted on her health. I spoke with my sister and told her that I was very stressed because of money situation. I was working but this was causing problems with my studies. My sister gave me some support and offered some solutions. Being in financial problems can be embarrassing for the family if other people knew"

The above excerpt suggests Naveed contacted kin for support when encouraged to do so by his brother. It also offers some insight into the type of support and sympathy provided by kin. Naveed is thinking strategically about which kin member he seeks support from. This is because cultural boundaries/laws impact or possibly restrict open dialog with close ties, in particular with parents and elder members of the family. For example, the tribal code of ‘honour’ plays a role in how people communicate and express themselves to others. Elderly parents are seen to be weak and in need of protection; therefore to cause them stress or possible embarrassment would be cowardly. This is possibly why Naveed only speaks to his sister about his problems and protects other members of his family. It also could be a possible explanation for the steady contact with kin, since requesting support or sympathy may be more difficult for a Pashtun diaspora due to the cultural implications.

Conversation content with friends does not demonstrate that support is provided and although communication is fairly consistent, personal issues are rarely discussed. The following excerpt is an example of friend communication taken from Mohammed:

"I called my best friend Ryan to tell him about this new computer I bought and some of the excellent features on it. He wanted some advice on whether he should buy the same computer. We spent a while talking about this. I offered my greetings and well wishes to his family"
Apart from a few entries where participants discuss marriages or interpersonal relationships, very little personal information/concerns are discussed with friend relationships. Most of the communication content was similar to the above excerpt, where day to day general activities are discussed. This is not surprising as Pashtuns are deeply private about their affairs and can be overly concerned about dishonoring themselves or their families.

Figure 7.4: Frequency of contacts made by participants to kin and friend group

The following section will address objective 2:

2. Can we distinguish between relationship ties based on the modality of the communication technology (Phone, Email, Chat and Social Network Site) use?

The phone was used mostly when communicating with kin; while email usage was low for both categories (see figure 7.5). Social Networking technologies were the preferred method of communication with friends, whilst kin preferred Skype to a lesser degree. The higher level of phone use with kin may be attributed to participants communicating with older relatives, who were unlikely to be proficient in using computer technology.
A further possible explanation could be the cultural sensitivities that arise during communication episodes. Emotional and more intimate discussions were carried out with kin over the phone. This can be attributed to the cultural background of the group. Thus, sensitive intimate issues will only be discussed with close family members due to fear of negative judgment by other tribe members. In addition, the phone offers immediacy, privacy and intimacy, compared to other forms of CMC.

The participants used our terminology of relationship type (Best Friend/Close Friend); however, on further investigation of communication content, their meaning of what constituted Best Friend/Close Friend was quite different. During the four months of communication recorded, emotional support was provided predominantly via Kin.

Rasheed, 33 year old IT consultant, discussed a relationship issue with his mother:

_I discussed with my mother about my uncle, that he did not call me to ask about my broken arm. My mother explained that he was travelling to Saudi Arabia for work and did not have the time. I explained that I was upset about this, as I am alone in this country and it is his duty to call me and ask how I am._
This excerpt demonstrates the fragility of relationships when codes of conduct are not adhered to. Rasheed clearly expected a phone call from his maternal uncle due to the 'loyalty code'. Any other form of CMC would not have met the criteria, since this form of communication is usually offered face to face. However, in this circumstance a phone call would have sufficed. This may seem superficial to an outside observer, however it is quite a serious matter to kin ties.

Support provided by Best Friend and Close Friend did not include the same level of intimacy as Kin. Most of the support was provided on themes such as education and economics. Although interpersonal relationships were discussed to a lesser degree:

Bilal, 31 a PhD student and security guard discussed with his Best Friend about a possible marriage proposal:

*I spoke with Adam (Best Friend) today about this girl I asked my family to look into for marriage; I think the families are nice and respectable. Adam agreed and said I should make sure we fully investigate the family before any decisions are made*

The above excerpt reads rather rigid and formal, and it is unclear whether this is for the purpose of the researcher, or it is the formal manner in which these matters are discussed.

Friend relationships used SNS more than kin, while kin prefer SNS for more formal exchanges such as posting photographs. MSN is primarily used with friends; however, kin also communicate with this modality, and gossip is the most frequent topic. This is in contrast to more intimate exchanges carried out by phone. However, participants sought trivial advice from friends, relations and discussed politics using MSN.

Skype use shows a clear picture, with general formalities being the most popular topic of conversation, with support, which can be identified as an intimate topic is not featured. Friends only exchange general formalities by Skype.
7.7 Summary

We found the phone was more frequently used with kin, and the most common content of communication by phone was emotional support. The findings are consistent with Baym’s (2004) study, which showed that students used the phone to maintain distant relationships, and in close relationships, where the telephone was used for more intimate communications. Cummings et al, (2000) found the telephone was the preferred modality for maintaining close relationships, which also agrees with our study. In contrast Dimmicks (2000) found that telephone was lower, and email was the more popular communication modality for supporting long distant relationships. Whilst our participants used email, their primary use was more regulated: exchanging photographs or official correspondence.

The second research question aimed to distinguish technologies used for communicating with strong and weak ties. The data shows MSN is used amongst close and best friends, but at a low frequency. However, email usage, regarded as a casual means of communication, indicates a weak relationship. The study has shown that phone use is preferred for communication with strong ties, particularly with kin. In contrast, Gonzalez (2008) identifies usage of this type of modality as an indicator of a poor quality relationship. Our study shows that close ties can be maintained amongst close friends using CMC, specifically MSN.

This study adds the MSN to telephone as an indicator of a strong tie relationship. Our findings show this support group to be primarily composed of kin rather than friends. The sample can be considered atypical and distinct from the general CMC user, due to their tribal customs and cultural constraints. Also, due to unfamiliarity with the technology, some individuals, living abroad may be constrained in its use.

The content of the conversations included economic, health, education, family celebrations, and festivities. This finding itself has some uniqueness attached, and indicates distance does
not have material influence on maintaining strong ties. We can conclude that the technology available enables the maintenance of such relationships.

Recognised limitations of this study include the small size of the study group and a comparison group living in Pakistan and communicating with people in the UK.

Most of the sample was communicating with close, best friends or kin. Therefore little can be said about weak tie relationships, such as acquaintances. Contact was predominantly by phone, followed by MSN. SNS use was infrequent, and this can be attributed to the older age group and professional nature of the sample. The communication content was varied. For example, emotional support was popular through the phone with kin. However, frequent advice was recorded in communication episodes with friends using MSN. Kin use the phone for emotional support contact.

Emotional and more intimate discussions were carried out with kin over the telephone. This can be attributed to a cultural background of the group. It was found when reviewing the diaries, that the entries were selective, short and exhibited a unique structure in the exchange; for example, a greeting could form the whole content. The Pashtun culture has very strict tribal codes of conduct, and a unique social etiquette exists within the society. Thus, sensitive intimate issues will only be discussed with close family members and even then, these will be filtered depending on the type of content shared. For example, any information deemed to break the unwritten laws, is not discussed, at least not with anyone from the same cultural background, including closest relations. If laws are broken there is a danger of ‘dishonoring’ oneself and the person the information is divulged to, and potentially making it difficult to seek intimate support from close (Pashtun) ties, if required. Furthermore, Pashtun culture amplifies sensitivities seen in earlier studies where emotion is shared on the phone.
Chapter Eight: Discussion & Conclusions

8.1 Introduction
The primary objective of the research undertaken in this thesis has been to explore the evolution of online interaction, as characterised by the rise of computer mediated communication and social media technology. Specifically, this thesis has attempted to provide insight into relationships of varying degrees of intimacy maintained online and offline. Implicit in this argument is that all relationship ties require a level of attention, with strong ties needing the most time invested. As time is a limited resource, maintaining a large number of weak ties may detract from the attention needed for stronger ties or lead to information overload (Eppler & Mengis, 2004). Evolutionary psychologists argue that the human brain evolved to manage connections between a limited number of friends, with micro-groupings forming to reduce the risk of predation, resulting in natural strata such as the support clique (of approximately 4-5 close friends), the sympathy group of 12-15, the affinity group of 50, and the active network of roughly 150 (Sutcliffe, Dunbar, Binder, & Arrow, 2011). Dunbar (1992) developed the Social Brain Hypothesis (SBH) and argued that relationships are categorised in a hierarchical order of circular layers; the closest network of relationships are stable, and as we move to the outer circles, the strength of these ties weaken. This raises interesting questions on whether SBH ego-centric network of emotional closeness may shift with the use of online technology. CMC reduces the constraints of time and distance and communicating with a larger number of individuals may be carried out with relative ease. However, previous research has not addressed CMC use in the context of theory motivated by the SBH on how humans maintain relationships from an evolutionary perspective; for example, relationship strength may be affected by an inability to communicate face-to-face, and relationships may decay due to location and reliance on CMC as a communication mode. Thus, we looked at whether the technology has caused a shift in the evolutionary theory of human relationship maintenance, and in particular SBH. Further,
the work will add to the theories in social science on how humans utilise technology to maintain relationships and whether particular CMC modes are used in specific social contexts.

This thesis explored these notions through carrying out four studies using a mixed method approach. Two quantitative studies were carried out to provide a general pattern of relationship maintenance and CMC use. Two qualitative studies offered an in-depth picture of how individuals maintained their relationships and the integration of CMC within their lives. The qualitative studies also highlighted users that stood out from the general population, and offered interesting insights into their relationships and patterns of CMC use, discussed further in section 8.3.

However, we will first revisit the thesis questions posited in chapter one and evaluate each in light of the data collected. This section is followed by a brief discussion of the limitations of the study. Finally, the thesis discusses the findings and suggests future research that may be useful within this subject area.

8.2 Research Questions

Some researchers posit there are different types of social relationships depending on emotional bonds and cognitive constraints (Dunbar, 1992; Barrett et al., 2003). It is argued that we need to engage in maintaining relationships (Stafford; Dunbar, 2012) to achieve health and wellbeing. Relationships may be measured on an emotional closeness scale from best friend to acquaintances. Dunbar (1992) argues we control the type and number of relationship ties, which if exceeded causes certain relationships to decay through cognitive constraints. The Theory of mind is widely thought to be crucial to human capacity as it enables us to build stable networks of relationships through the process of ‘mentalisation’ (Kinderman et al., 1998). Memory is key to this process, as it may impose a limit on the number of individuals that can be maintained at any one time; in other words there may be constraints on the ability to maintain a large mental database of detailed information on a
large network of relationships (Stiller & Dunbar, 2006). Thus, the constraints of a ‘social time budget’ may favour a few individuals in which the ego has the ability to invest time and learn about in detail.

Within the SBH, Dunbar calculated a hypothetical limit on the human cognitive ability to maintain interpersonal relationships, defined as approximately 150. The number derives from understanding social cohesion of groups, as seen with primates, including rituals such as social grooming and general socialising in humans; for example gossiping. Dunbar (1992) originally studied primates, and continued by studying villages and tribes from a historical context.

In the context of Dunbar’s hypothesis, 150 is the number of people an individual associates with and maintains contact; historical associations, that have decayed, are not included. Although in adult life we remember we knew 30 people at school but these ties would not be included, as the majority of them would have ceased from loss of contact or displacement. Dunbar (1998) states that the limit of 150 can be aggregated within layers of strength based on emotional closeness or tie strength. The quality of the relationship can be described using four hierarchical circles of emotional intensity as shown in figure 8.1
From figure 8.1: the inner most circle 3-5 is the very closest tie, indicating a high quality relationship, such as someone you can rely on in an emergency or for intimate personal support: a best friend or kin. The next outer circle represents 12-15 people termed sympathy group; an individual will be in regular contact with these group members, as with close friends. The third outer circle, containing 45 – 50 people represents distant friends or acquaintances. Finally, the outermost circle contains 150 representing loose ties or weak relationships.

8.2.1 Emotional closeness and SBH

In chapter 4 we sought to explore parallels within SBH: two primary levels of emotional intensity were identified: Support and Sympathy cliques (see fig 8.1). The two inner layers of the four layers posited by SBH are defined as the most intimate relationships one maintains. Thus the following question was posed:
1. Within the Support and Sympathy clique as defined by the Social Brain Hypothesis (SBH): do intimacy patterns correspond to SBH?

Results from chapter 4 corresponded with the SBH, in that the means were consistently higher for support clique, compared to sympathy clique. These findings indicate that human beings do categorise relationships in a hierarchy of emotional intensity, and within these two groups (support & sympathy) the maintenance behaviour differs. The transcripts from chapter 5 found that relationships were maintained through companionship, investing time, exchanging social support and sharing interests. Duck et al, (1991) and Stafford (2004) explain that these factors indicate a stable relationship. In chapter 4, we found that the duration of a relationship positively correlates with the emotional closeness of the relationship, and that childhood relationship ties were the most durable. A study by Walther (1992) recognised that emotional closeness was strongly related to the duration of a friendship. In addition, there was no significant difference in emotional closeness when proximity was measured as a factor. In other words these relationships show that they can withstand infrequent face-to-face interactions with their alters, and yet have a continued intimate relationship. Haythornthwaite, 2002 argues that for a friendship to continue at a high level of emotional closeness, it requires reciprocity, self-disclosure, and frequent interaction. The data in chapter 5 and 6 shows CMC enables these features. In summary, it is possible that a strong relationship may continue through CMC contact, even when proximity prohibits face-to-face interaction.

Chapter 6 revealed that the preferred mode of communication differed with regards to emotional closeness: face-to-face was the preferred medium for intimate relationships. This is not surprising as some scholars argue that face to face interaction is necessary for relational satisfaction and stability (Berscheid & Lopes, 1997; Nussbaum, 1994). Of concern
is the effect on the level of emotional intensity and whether it diminishes when CMC is used, and when face-to-face is not possible. Chapter 4 found that proximity does not affect emotional closeness and thus, individuals will overcome communication constraints and will adapt to use CMC media to maintain their relationships, and hence keep intimacy constant (Finchum, 2005). Although in Chapter 4, there was no significant difference in emotional closeness when using SNS. However, CMC allows for remote interaction with alters, and this may compensate for the lack of face-to-face communications in maintaining the level of intimacy already established in the real world. Consistent with this assumption, Shklovski et al (2008), in a survey of 900 people communicating with distant alters, indicated that high levels of intimacy could be maintained using CMC, including SMS, Blogs, SNS and photo-sharing sites. Similar findings were found in regard for the need to use a medium that provides a richer interaction, such as phone, when face-to-face is not possible; meeting the need for less “ephemeral” interactions and limitations associated with CMC use (Shklovski et al, 2008). When proximity is considered, the phone was found to be a popular mode of communication amongst the diaspora in Chapter 7, possibly due to their alters lack of technological knowledge, the phone was their main form of communicating. This mode helps individuals maintain a rapport in their daily activities (Kraut et al, 2006). The phone can keep a relationship alive through verbal cues and the synchronous nature of the media, and fulfill the expectation of a continued intimate relationship (Kraut et al, 2006, Shklovski et al, 2008). Thus, after face-to-face the phone is generally better for intimate communications.

Individuals utilising CMC are able to maintain strong relationships at a distance, as found in chapter 6. The data showed that individuals maintained strong relationships abroad, attributed to kin relationships, but tended to maintain the sympathy group locally. Rose (1984) found that more face-to-face maintenance may be necessary for friends that are outside the innermost circle (the support group), and maintaining relationships with
individuals within the sympathy group abroad may be a challenge. Altman & Taylor (1973) argued that close friends (sympathy group) may not have reached relationship stability, and therefore require more active friendship development strategies.

Kin formed part of the network of social relationships our participants maintained. We found, consistency with the Selective Investment Theory (SIT), that alters are directed towards kin-based altruism; that is we tend to favour close kin as targets of our pro-social behaviour (Brown & Brown, 2006). For example, in chapter 5, Terry cited his sister as his best friend and confidante, notwithstanding associations with best friends "my sister is like my best friend, I can talk to her about anything". However, culture and family dynamics can sometimes create a barrier between the two parties, according to SIT: the giver and receiver. For example, Khadija found it difficult to exchange intimate information with her family due to possible family resentment from the disclosure "I don't tell everything to my family because they will either be annoyed or worried, I have friends for that", thus, a friend can be elevated to a kin relationship in terms of emotional closeness.

Some individuals did not utilise CMC as a means to maintain friendships and preferred face-to-face communication for support and intimacy "I don't use the internet to maintain friends, I prefer seeing them face-to-face, it's more real as I can see their faces". The transcripts revealed it was a lack of trust, privacy and intimacy with CMC that dissuaded them from using the media; although many people may opt for CMC when face-to-face opportunities are limited, and there were a few egos who preferred not to engage at all, "I don't trust online stuff", "It's too public for my liking". Trust is cited by Brown & Brown (2006) as a necessary attribute in a committed relationship, and this consideration may determine the media used. Chapter 5 found in low CMC users, that some egos felt unable to utilise CMC effectively for their social support requirements, which was also demonstrated in chapter 7, illustrating that CMC may be limited in maintaining or developing intimate relationships for some people. Possible CMC limitations in forming relationships found in Chapter 5, may
include concerns of privacy, the impersonal nature of CMC, and the lack of familiarity (Walther, 2011). The findings in chapter 5, defined a sub-cohort of high socialisers/low CMC users, and identified characteristics for the grouping: lack of trust, poor intimacy experience, and lack of privacy. Further groupings are discussed below.

8.2.2 Maintaining Relationships & CMC

Communications technology has the ability, theoretically, to greatly extend our capacity for extending our social network. Technology, and recently computer mediated communication (CMC), can potentially allow us to socialise extensively by minimising the maintenance work and the time hitherto needed to continue a relationship (Walther, 1992). Distance is also a factor that loses its importance when considering the ease of CMC use as a means of relationship maintenance (Kraut et al., 1998). However, critics argue that CMC interactions are trivial and cannot be regarded as evidence of real emotional closeness (Chan & Cheng 2004; Cummings et al., 2002; Short et al., 1976). The debate on the true quality of online relationships pivots on the idea that face to face visual cues are necessary for the maintenance of a meaningful relationship. These visual cues include the voice and its tone, posture, appearance, dress code and social surroundings (Knapp, 1972; Remland, 2000). Also these communications are bound by the context of the exchange; for example, merely sharing information in a community forum of shared interest between two individuals may not be considered a true friendship. In contrast, Walther (1992) argues that CMC can actually enable relationship maintenance through “knowledge generating strategies”, that include interrogation, disclosure of oneself, and deception used to collect meaningful psychological information regarding the alter, which can foster emotional closeness. In addition, Parks and Floyd (1996) argued that CMC liberates us from the physical constraints of face to face and locale, and identify the virtual world as offering opportunities for genuine relationships. In light of these discussions, the following question was investigated
2. How is CMC, and in particular SNS, integrated within the lives of users in maintaining relationships?

Online SNS social interactions offer many benefits including ease of access, time & cost, and a lack of boundary constraints, also enabling relationship maintenance, and in some cases formation new ones. In many instances, and in particular within chapter 5, our study showed that shared interests (boyd & Ellison, 2007) were the catalyst for SNS interaction, initiating and developing an online relationship. The finding also supports the view that in addition to building social capital (Ellison & Lampe, 2007), other motivators can be identified for some SNS users. For example, the transcripts in chapter 5 showed that promotion of a music band is cited as a reason for using SNS, through wall posts and uploading sample music files. However, both the qualitative and quantitative data in chapter 5 and 6 showed that meeting new friends was not identified as a prime reason for SNS use, instead, maintaining previously established relationships was the main motivator (Ellison & Lampe, 2007). However, data in chapter 6 showed that the majority of participants did indeed make new friends through SNS, but these friendships could be defined as acquaintances, following an agreement to accept a friend on FB. Resnick (2002) noted that in CMC there are many more opportunities available in finding individuals with shared interest, and thus providing the opportunity to increase ones network. Although an increased network will mostly be made up of weak ties (Roberts et al., 2009) they are important for information sharing as Granovetter (1995) argues.

SNS was used with distant kin communication as shown in the quantitative data in chapter 6, as family members are able to keep up to date with distant relations without cost or effort. However, this conflicts with participants from chapter 7, where the phone was the preferred mode of communication with kin relations abroad, which may be attributed to possible lack
of technical skills in an older generation and cultural constraints. Sayago, et al., (2011), highlighted interaction as a skill found weaker in older people: visual cues, text typing and general speed of responding were cited as lacking in older people. SNS, as a form of communication, is usually devoid of explicit emotional content and may serve a purpose to reaffirm that the relationship exists (Ellison & Lamp, 2007). Some of the participants in chapter 5 revealed that disclosure of personal information can have negative effects and instill feelings of insecurity, inadequacy and loneliness. This can be attributed to individuals making comparisons and judgments in relation to self-perception. Jordan et al., argue that individuals overestimate others’ happiness, and tracking an alter online may lead to the ego evaluating themselves based on their friend’s perceived happiness (Fesinger, 1954). Thus is not surprising that some participants in chapter 5 felt following others fostered feelings of loneliness and self-worth appraisal. For examples egos’ refusing to sign up to social networks because "I don't want to see how happy someone is online, with their happy families, just makes me think about what I don’t have". To overcome these feelings, some egos created false profiles, that serve a specialised use of SNS, removed from the reality and disassociated from any kin or friend tie that may exist "I don’t trust the internet and I don’t want to know about anyone’s life, I just go on there with a fake profile and stalk my estranged father".

In the wider context, considering CMC use, a number of studies report that CMC relationship quality can be as strong as offline relationships (Perris et al, 2002; McKenna et al, 2002; Park & Roberts, 1998), and can be as rich as an offline relationship for frequent users of CMC. However, these generalisations ignore other factors, where a small number of individuals, as shown in chapter 5, have particular personality traits that allow them develop relationships to a similar extent with the more socially active members of the community. Their shyness may be the manifestation of a disability or a lack of social skills that inhibit the
individual in face-to-face situations. Consequently CMC is utilised as a medium for socializing, resulting in a positive outcome of friendship development and maintenance. However a singular reliance on CMC for friendship may compound inadequacies in real world relationships; but in general, users maintain relationships offline and use CMC to augment these relationships.

From the transcripts data in Chapter 5, there is evidence of a number of modes that ego’s use to interact socially: some individuals interact wholly with their closest alters online, whilst others will prefer interactions to be face-to-face offline. In between, other alters can be identified as applying a mix of both on and offline socializing. To structure this data, a framework is proposed with four categories: High socialiser & High CMC user/High Socialiser & Low CMC user/Low Socialiser & High CMC user/Low Socialiser & Low CMC user. From the literature (Stafford, Kline, & Dimmick, 1999; Horrigan & Rainie, 2002; Cummings et al., 2002; Haythornwaite, 2005, Kraut)), there is disagreement on why individuals choose a particular mode of socialising; for example, Stafford Kline, & Dimmick, 1999 found email most popular to maintain intimacy; whilst Cummings et al., (2002) found face-to-face and the phone was preferred. However, Haythornwaite (2005) argues that many social relationships are multimodal, the range of modalities used to maintain any relationship is associated with the strength of that relationship and its’ perceived importance. Categorising our participants, based on their preference of communication, a finer grained and more focused study becomes possible. For example, an investigation into why CMC is not considered a suitable communication medium by some individuals will focus on the LL group for a richer picture. This approach would provide targeted responses, or the category could act as control group in a statistical survey.
An outline of the framework of our findings is given below.

![CMC use diagram]

From the transcripts in chapter 5 it was found that family life, proximity of ties and work commitments are major influences on one’s ability to participate in the CMC world. High socialisers and high CMC (HH) users were typically high users of Social media and in particular Facebook. This category consisted mainly of students, and younger people with surplus time. The technology facilitated socialising with real world relationships, maintained with friends and family at home, and also peer pressure was a factor influencing CMC use. Ellison et al., (2007) and Steinfield et al., (2008) found that students who used SNS more heavily had higher levels of social capital, but general internet use did not show this. Other HH users, were individuals who utilised CMC, in particular, Facebook or twitter, to promote their business or hobby, and maintained weaker relationships online rather than close ones, which were maintained offline. Thus, HH use CMC to widen their circle of acquaintances, whereas, LH shift some support and sympathy relationships in the online world, so for them CMC allows maintenance of relationships which they otherwise might not have. For the LL
group, the transcripts indicate that CMC offered few advantages in maintaining relationships, determined from the ego early experiences with CMC. Finally, for LL group, family issues seem to dominate reasons for lack of socializing in general. The transcript revealed that some of the older individuals preferred face-to-face contact with close ties and felt this form of interaction was important in maintaining their emotional closeness "I prefer to be able to see my best friend, give them a hug or talk to them face-to-face about personal stuff". Time was also a factor.

Following a detailed review of the transcripts from chapter 5, the framework is expanded showing a rationale for the egos’ CMC social activity (figure 8.3)

The emotional strength of a tie has a strong relationship with the frequency of communication (Hill & Dunbar, 2003). Thus, for a relationship to continue and avoid decay, communication must be regular over time. Therefore, the time available to maintain a relationship can be considered a finite resource, limiting relationship strength and the number of ties (Miritello et al, 2013). Examples of this observation are found in the transcripts in chapter 5, where participants classed as Low CMC users cited lack of time as the reason for not engaging in CMC. High Socialisers and Low CMC (HL) users were individuals who had busy real world social lives, family commitments, employed, and therefore had limited time for CMC use. In contrast some High CMC users, typically students,
attributed their high use to surplus time. The ease and convenience of CMC appears to be outweighed by the cost of time to engage in relationship maintenance. Barrett et al (2004) found similar results in the size of a network of phone users that peaked at 100-150 connections, and the more connections the weaker the ties. All of this is consistent with Dunbar’s SBH (1992), in that the number of ties within a network has a limit due to cognitive and time constraints.

A number of participants from Chapter 5, in the Low CMC users group expressed concerns of privacy and trust with the technology. High CMC users have a high level of trust in the technology and a lack of trust is related to low CMC use. Thus to be classed a high CMC user, a degree of trust must be present. This finding extends Sutcliffe et al., (2012) idea of trust as a necessity for an intimate relationship, and the foundation for forming and maintaining social relationships. Figure 8 shows that trust is also a relevant term in the context of the technology. High CMC users by definition may instill a degree of trust in the technology. Conversely low CMC cited their lack of trust in CMC. Trust may exist between two individuals, but maintaining intimate exchanges through CMC may be limited by lack of trust with the technology. In general, trust can create a barrier, blocking the traditional idea of "cost benefit mechanism" (Sutcliffe et al, 2012) between parties in a CMC social network. Therefore models mapping relationship strengths to cognitive constraints and frequency of communication must consider the effect that trust can have on maintaining a relationship when CMC is used. Boredom, featured under HH and HL interviewees cited CMC as a time filler, and specifically used SNS for trawling through profiles of ‘friends’.

It is noted that Low Socialiser and Low CMC (LL), consisted of older individuals with busy work and family commitments. Some of the individuals in this category stated they had experimented with CMC, but rejected it as a means of enriching their social lives. The Low
socializer and High CMC (LH) group included individuals with a limited real world social life and few friends. To overcome these constraints, they adopted high CMC use for developing and building friendships, at various levels of intensity. The excerpts from chapter 5 found that CMC allowed these individuals to shed inhibitions and interact without fear of rejection. It can be argued that these ties are transient and trivial in nature, and not consistent with Dunbar’s (1998) idea of stable relationships in his SBH theory. However, the support and stated level of intimacy provided by the alters puts them in the category of stable relationships. Furthermore, Tidewell & Walther (2002) found that individuals communicating solely through CMC can and will form intimate relationships, comparable to relationships formed in the real world. Online forms of social interaction provide opportunities for friendship, sharing common ideals, and in turn a feeling of belonging, and for lonely individuals it can be a compelling reason to use CMC (Morahan-Martin & Schumacher, 2003).

Overall, there were no differences in CMC and offline emotional intensity (chapter 4 and 6). Thus, face-to-face relationships may not be considered closer than relationships communicated with using Facebook or email. In the context of SBH, online relationships have a similar structure to real world relationships; individuals maintain layers of relationships ranging from close to weak ties in a hierarchical manner. However, it is likely that some level of face-to-face interactions do occur, even for distant relationships.

From the transcripts in chapter 5 and the data from chapter 4 and 6, for each quadrant in the framework, categorisations are applied for the relationship types, following Dunbar’s (1992) terminology. For example, HH (8.4) users maintain their relationships both offline and online. The constraints of time, trust and weak social skills do not apply to this group, comprising mainly students. For the group HL (figure 8.2 & 8.5), who maintain their relationships mainly in the real world, using F2F and phone as their primary communication
medium, time and trust are the constraining factors. LH (figure 8.2 & 8.6) users may have smaller SBH Support (1-3) Sympathy (5-7) compared to the SBH values, due to family and work commitments, and some individuals use CMC to build and maintain relationships that are lacking in the real world, constrained by time and poor social skills in the real world. This group highlighted potentially lonely individuals who used CMC to compensate for their lack of social skills in the real world, and to overcome their loneliness. LL structural numbers also do not conform to SBH values (Support (1-3) Sympathy (2-5)). Constraints impacting on this group include time: due to family and work commitments and also personal loyalties, disinterest following unfulfilling experiences with CMC and a lack of trust with the technology. Some evidence exists, chapter 5, that individuals may have little desire to socialise with others, possibly due to complacency, “I can’t be bothered going out or online.....”.

![High Socialisers and High CMC users & SBH](image)

**Figure 8.4**: HH users augment real world relationships the same as SBH
High Socialisers and Low CMC users & SBH

Increasing in emotional closeness

Sympathy clique – Close friends, maintained F2F

Support clique – Best friends, F2F/phone

Outer network – colleagues, Other parents from school, work acquaintances -

Affinity group – family friends, colleagues

HL – Wide circle of friends offline, ego aged over 25, family and work commitments. More examples of offline interaction – proximity is a factor. Older family – less time. N=4

Low Socialisers and High CMC users & SBH

Increasing in emotional closeness

Sympathy clique – Close friends, maintained F2F or solely online -

Support clique Best friends, phone - for some only online best friends

Outer network group – acquaintances - chat rooms

Affinity group – family, neighbours, work colleagues, peers online chat room/shared interest

Smaller SBH and CMC may be used as a substitute for real world relationships

LH – Few real world friends, ego aged over 25, family and work commitment – less time for offline interaction. More online friends to compensate. Also outliers exist in this group. N=7

Also outliers in this group

Figure 8.5: HL users network mainly real world relationships and mirror SBH

Figure 8.6: LH Have smaller SBH and CMC used a substitute for real world relationships
8.2.3 Patterns of CMC use

Early researchers grouped CMC as a single medium, and reported that communication was a poorer experience, compared to face-to-face (Sproull & Kiesler, 1986). Also, from early research, it was thought that CMC required greater effort for participation (Brennan & Ohaeri, 1999; Clark & Brennan, 1991). Consequently, egos would experience problems in maintaining close ties. However, with the current diverse methods and sophistication of CMC technology such early arguments can no longer be supported. Individuals use CMC technology to communicate with friends and family, and this is accepted as a common application of the media (Kraut, & Frohlich, 2001; Haythornthwaite, 2002; Williams, 2006). Common applications include arranging meetings and events, communicating with family and friends, both locally and abroad, SMS for fast timely messaging to convey greetings or
updates, SNS for social updates and information and the phone for quick synchronous communication.

CMC shows different patterns of use, depending on the nature of the relationship between the individuals. We were interested in highlighting any differences in usage patterns of CMC in the maintenance of relationships at four levels: Kin, Best Friend, Close Friend and Acquaintance, and identifying any consistencies with Dunbar’s SBH (1998). These considerations led to the formulation of the research question below.

3. **What are the patterns of CMC use in maintaining different strength relationships, located and co-located?**

Control can be exercised within CMC; individuals can choose to participate and engage in the online world, and choose who they want to be and how they communicate, as the face-to-face context is eliminated. However, in the real world, developing a new relationship can be a costly exercise; meetings must be arranged, transport organized, and the venue arrangement decided for such activities as dinner or cinema; notwithstanding the individual personality that may not align with the other parties, particular idiosyncrasies. Thus, given the low cost of maintaining an online relationship, and the costly investment to maintain in an offline relationship, it could be argued that emotional intensity might be lower for online relationships. However, Chapter 4, found that participants reported no difference between emotional intensity levels, with relationships maintained both off and online. Other studies have shown (Finchum, 2005; Joinson, 2001) that relationships can endure and continue in their strength, using CMC, in spite of a lack of physical proximity. Such findings are further reinforced in a longitudinal study by Chan & Cheng (2004) who found that over time, online and offline friendships show no difference in intimacy levels.
Within chapter 6, CMC modes were delineated and distinctions were found between them. As expected, the phone and SMS were the most popular media. Modern smart phones are now considered to be computers, and combine social media and other forms of CMC in one device. The data in chapter 6 and 7 showed that phone was the most popular medium for intimate exchanges; email was most popular for communication with acquaintances. Chapter 6 revealed that different SNS features were used for Best Friend/Acquaintance. The data shows exchanges involve private messages and photo sharing, with higher frequencies for Best Friend, and newsfeed usage frequency was higher for Acquaintances. There is disagreement in the literature over user motivation for preferring one feature over another within SNS (Sheldon, 2008; Ross, et al., 2009). According to Cheng & Heng, (2014) common motivations include: "social interaction needs" – the need to communicate with friends; and “passing time” or gossip between friends.

Gender was explored in chapter 4 and 6 but no distinction was found in usage, thus male and females display similar patterns of CMC use. However, homophily was observed, in that females and males had a higher number of same sex ties (shown in data in chapter 4).

Data in chapter 6 revealed that patterns for CMC usage differed, and indicate that strong ties preferred face-to-face or phone over other CMC. In contrast, for weak ties email was preferred. However, when the alters resided abroad, the ego was just as likely to use the phone as SNS to maintain the relationship at its level of intimacy. This result applied to all ties. CMC offers many opportunities for building social capital, possibly resulting in a larger numbers of weak ties at the expense of more intimate ties. However, the analysis of true relationships, measured on our intimacy scale in chapter 4, reveal that the SBH generally holds. If proximity is a consideration, it may be expected that patterns would differ, as long distant relationships may be more difficult to maintain, due to time differences, lack of face-to-face interaction and loss of motivation through absence of the friend. Nonetheless, the
data in chapter 4 and 6 found that the patterns of CMC were similar when proximity is considered. Notwithstanding the costs, egos’ acquire benefits that outweigh the challenges in maintaining the relationship at the desired level of intimacy. For example, Brown & Brown (2006) cite receiving sympathy, empathy, gratitude, and feelings of happiness in communicating with likeminded individuals outweigh some of the costs of the transaction, such as allocating time, sharing information, and a willingness to participate.

Ties both at the strong and weak levels are maintained using the technology. However, for a relationship to develop and become stronger, there is an indication, from the data in chapter 5 and 6, that face-to-face may be the necessary communication medium. The literature states that face-to-face encounters offer a rich experience including, physical presence, personality, intelligence and the ability to question closely. Kock, 2004; Kock et al., (2008) developed the media naturalness theory, an extension of the media richness theory (Daft & Lengel, 1986) which explains that humans feel most comfortable, and have developed interpersonal communication skills intended to be used in face-to-face context. Thus CMC may be deemed less natural to humans and would need a higher degree of mental effort to reach communication satisfaction (Kock et al., 2008).

However, in the absence of face-to-face interaction, close relationships can overcome the void created by distance (Wright, 1984), and maybe sustained through certain cues and communication episodes that may be considered brief and involve the use of SMS, email or SNS. For example, Walther (1992) identified cues arising from variations in the text, font styles, capitalization for emphasis and the use of emoticons and acronyms. Also, body language can be expressed within CMC, using animated avatars and verbal commands indicating physical expressions, such as smiles (😊) and *hugs*.

In contrast, our research project shows in chapter 4, 5 and 6 that close friendships require some degree of face-to-face communication, and hence more active maintenance is needed.
(Dunbar, 2012). When face-to-face opportunities are limited, these relationships may use CMC for maintenance, but with higher levels of interaction with sympathy group, shown in chapter 6. These relationships rely on frequent interaction within the constraint of the overall available social time, and with an active network size of 12-15 we can expect frequent contact to be subject to a cost benefit trade off (Sutcliffe et al, 2011). Finally, chapter 6 showed patterns of communication for kin and acquaintances, having similar infrequent encounters; this can be attributed to two different reasons: kin are blood ties that require little or no maintenance since the relationship can be considered constant; in contrast, acquaintances are considered casual encounters requiring less maintenance. They may be considered transient; exchanges amongst acquaintance using SNS were less intimate compared to kin, which involved private messages and photographs.

Considering gender, chapter 6 showed no differences in usage patterns observed. Gender behaviour is not distinct within the world of CMC.

8.2.4 The impact of CMC on Diaspora Communities

CMC creates opportunities for linking Diaspora with their friends and kin abroad, so the “friction of distance” (Champion & Fielding, 1992) may be overcome with CMC. We were interested in exploring how individuals maintain contact with their relationship ties of different strengths, and if the technology is utilised beneficially. We asked the following question:

4. How is CMC utilised for geographically remote intimate & personal relationships

The context of the conversations documented in the diary studies is of a geographically remote cultural society. The cultural context and the overarching tribal law strongly influence the content of these exchanges. The laws possess a cultural message, particular for the ethnic participants in the diary study. Hence, observations that link the
communication content to normative conversations in the general population must be made with caution. Essentially the culture has a strong influence on the communication content.

As stated by individuals in chapter 5, CMC may offer a reduced intimacy experience for some individuals. This is particularly true in considering our diaspora group in chapter 7. They show a clear preference for the phone as a means for maintaining their intimate relationships, as it is the closest medium to face-to-face interaction. Gonzalez (2008) recognised the lack of intimacy associated with most forms of CMC. Technology familiarity may influence the type of technology used (Brown et al., 2004). CMC seems to have little value as the participants preferred the phone. Present with the phone are the verbal cues and the two way synchronicity of the conversations that include intimate exchanges, and keep alive the relationship (Kraut et al, 2006, Shklovski et al, 2008). For the diaspora the phone is a possible second option, and first, when face-to-face is not possible. The other constraint is the lack of technical knowledge; communication carried out was mainly with older generation; parents who would be more familiar with and experienced in using the phone rather than CMC. Cummings et al. (2002) obtained similar results from a students’ diary study; face-to-face and the phone were the preferred media for maintaining intimate relationships. Gonzalez (2008) identified SNS as providing a lower quality experience, compared to face-to-face, although SNS was used to provide a level of communication, such as posting photographs as shown in Chapter 6 & 7.

Privacy and tribal codes of conduct constrained communication content for some individuals in the Pashtun community. For some individuals there is a keen sense of formality and obligation towards the person or people in communication, and these cultural considerations are important. Within this group, culture influences when CMC is used. For example, condolences or congratulations would be delivered, using the phone, following a strict protocol of giving and receiving. These associations are dominated by kin relations located mainly in one town or village. In small villages it can be surmised that many individuals
would be kin related, due to the lack of social mobility and transport, and therefore it is not surprising that these relationships would form the strongest ties.

Miller & Slater (2000) highlighted culture as an important influence on how internet technology is used in maintaining social relationships. The way that users interact with the technology may be restricted in a tribal society governed by strict customs. In contrast, a disparate social structure will employ wider use of the technology. Thus the technology can be utilised, given the social context within which it is used. Viewing the technology as a culture in its own right, stripped of all social context can create a barrier to acceptance and utilisation by some remote communities.

8.3 Conclusion

SBH states that individuals are capable of maintaining no more than 150 ties, due to cognitive constraints (brain size), and time. We invest in time to maintain a relationship, although this may not be true for kin relationships. If we do not invest time, a relationship deteriorates in its quality (Dunbar, 2011). The data used in this thesis was structured to satisfy features identified in SBH. Similarities to the SBH were found in CMC usage across various modes. This research project offers answers to significant questions on the link between SBH in the context of CMC use.

It was found that face-to-face communication was still preferred over all forms of CMC to maintain intimate relationships. This finding overrides all considerations of convenience and ease of use associated with CMC. Notwithstanding this choice of face-to-face, when proximity prohibits face-to-face encounters, users will adapt and use CMC to maintain their relationships at the desired level of intimacy. For example, in the absence of face-to-face opportunities, egos’ may turn to the phone. Theories associated with SBH are replicated in the online world for support, sympathy, affinity group and outer network. The constraints found by Dunbar (1998) evidently still apply – time and cognitive ability, when CMC is
available. CMC was mainly used for supplementing real world relationships. However, there are people who would not have fulfilling relationships without CMC, and use it as a sole source of support and intimacy. In contrast, other individuals avoid using the technology, owing to a lack of trust - privacy and security concerns. Others simply state they preferred face-to-face and had little motivation to use CMC, due to family and work commitments. Individuals utilise the technology in ways that derive from their socializing habits. Thus four categories of user can be identified: High CMC and Low Socialisers, High CMC and High Socialisers, Low CMC and High Socialisers and Low CMC and Low Socialisers, resulting in a development of a framework.

8.4 Theoretical and Empirical Contributions

There are four essential contributions impacting on current theory. The findings offer new knowledge within the research of CMC and relationship maintenance theory. In our understanding these exploratory questions have not yet been addressed, and therefore the findings of this research project are significant in their contributions.

8.4.1 SBH is replicated in CMC

The original SBH work by Dunbar (1992) focused on relationship ties in the real world. This work extends Dunbar’s SBH to ties maintained within CMC. Also proximity is introduced as a new variable in consideration of any influences distance may have on maintaining the hierarchy of SBH relationships. Within the context of CMC use and patterns of friendship maintenance, significant correspondence was found with the SBH. Some individuals maintained smaller SBH values for the hierarchy of relationships, attributed to social constraints, such as busy family life. In conclusion, we found that the widespread use of CMC has not changed the constraints of the cognitive ability to maintain a number of relationships, and the investment time needed. In spite of the ease and convenience of CMC, utilization seems to be limited by our brain size.
8.4.2 **Relationship Strength and CMC**

The social information processing (SIP) theory stipulates that individuals will use all media to their advantage to maintain relationships (Walther, 1992). Our findings reinforce SIP’s assumption that individuals will adapt to the available CMC to reach interaction goals and required intimacy levels. However, our research project indicates for most individuals, for a relationship to develop, face-to-face meetings are essential. Thus, CMC provides an easy to use, low cost medium for relationship maintenance, but may require initial time and effort for developing relationships. However, individuals are identified who may have difficulty in initiating and developing relationships in the real world, where face-to-face encounters are necessary. These individuals take advantage of the impersonal nature of CMC technology, and use it effectively to develop and maintain intimate relationships.

8.4.3 **High & Low socialisers Vs High and Low CMC users**

From the findings in chapter 5, we developed a framework in which individuals were categorized based on their CMC use and socializing levels. Groupings are formed from the interview transcripts, offering a deeper understanding of why individuals use CMC and the constraints that may exist. The framework offers alternative categorisations, focused on the framework groupings. These alternatives are valid if further investigation is considered into a specific group, such as a high CMC user who is also a high socialiser.

8.4.4 **Pushtun Diaspora and CMC relationship maintenance**

Different patterns of CMC use were found within the diaspora group studied in chapter 7. The findings raised questions of communication habits within displaced diaspora communities and the ego’s utilization of CMC. The phone was found to be most popular media, and culture had a strong influence on communication content. The phone offered this group a level of familiarity, close to face-to-face, compared to other forms of CMC.
8.4.5 **Mixed Method**

A mixed-method approach was adopted to quantify activities and relationships for understanding individual’s reasons for CMC preferences. This approach provided stronger evidence for the conclusions through convergence and corroboration of findings. Another advantage of using mixed methods approach is increasing the generalisability of the results (Burke & Christensen, 2008). The mixed methods approach demonstrates the advantage of combining quantitative and qualitative data.

For this research project, the mixed method approach provided insight into:

a) The general patterns of relationships and CMC use. The approach was quantitative, with data from 30 individuals in chapter 4, and 189 in chapter 6.

b) Exceptions and reasons for maintaining relationships and CMC use. This approach was qualitative from evidence in Chapter 5 and 7.

The quantitative enquiry focused on testing Dunbar’s social brain hypothesis with the participants’ network of relationships, and the patterns of CMC use compared with F2F interaction. Data on SNS features used, and the number of friends maintained through SNS, was also collected. In order to capture the experiences of participants’ use of CMC/SNS and communication content, the qualitative study was conducted and data was collected through interviews. As argued by Creswell and Plano Clark (2007), it is more than simply collecting and analysing both kinds of data; it involves the use of both approaches so that the overall strength of the research is greater than either qualitative or quantitative analyses alone. Furthermore, this research has provided evidence to support the claims of Saunders et al. (2007), Hughes et al. (1997) and Kane (1991) that using more than one method strengthens the validity and credibility of the analysis, presenting a more accurate picture of research findings, and leading to greater confidence being placed in the conclusions. Triangulation of findings help to improve the validity of the results, and provided a more
complete picture of the phenomena, enhancing this research credibility and improving the usefulness of conclusions as described by Bryman (2006).

8.5 Limitations
Despite the contributions of the current research project, there remain limitations that should be considered for future research. First, chapter 4 used a small sample size, and therefore constrained the statistical tests that could be carried out, and preventing the generalisation of some of the results. Furthermore, the study in chapter 4 did not offer a wide categorisation of CMC media as in chapter 6. This could have provided an opportunity to explore comparisons with patterns and frequency of CMC use and SBH. Secondly, a longitudinal study on how CMC is integrated within the lives of users over a period of time could investigate longer term impacts. The interview provided some initial data, but a long term study could look at changes in CMC use, and also friendship maintenance patterns. Further investigation on communication content and how these develop over time could provide further insight into the preference of CMC used and why. Finally, the UK network of the diaspora was not studied, mainly kin ties were included in the study. Thus, comparison with the general UK network of relationships was outside the scope of this research project.

Finally, the sample used in diaspora study was limited in that it used one gender type and their communication patterns with their network. Therefore a study that uses both gender types would offer further dynamics to the research. In addition, the network of alters in the diaspora study were primarily of kin relations, this limited the exploration of friendship relationships and the maintenance strategies. The diaries could have included more explicit questions on friendship relationships and the communication patterns used within this relationship type. Moreover, the diaspora group was based in the UK and we explored their perspective relationship maintenance and CMC use. To understand the preferred mode of
communication for relationship maintenance it would be useful to look at the alter relationships abroad and their motivation and patterns.

CMC research and conclusions must be considered with caution as the results are dependent on the data. Completely different findings are possible from studies of shy individuals who do little socializing in the real world. People in this group can be avid users of CMC, and fully utilise the benefits proclaimed by vendors: making new friends, ease of communication, joining communities with shared interests and generally enjoying a full online social life (Walther, 1992).

8.6 Future Work
As stated in the previous section future research may focus on a longitudinal study of CMC use and relationship maintenance based on strength tie. From our research project we see that the duration of a friendship is significant to maintaining close relationships, but it is unclear whether over time weaker relationships change, and become stronger through regular interaction through CMC use; or indeed whether a specific type of medium offers an increased opportunity in developing the relationship.

Our research project demonstrated homophily was present and a tentative bias towards maintaining female alters residing abroad. Future work could specifically explore the intimacy of gender in friendship relationships and explore communication content via CMC – which will provide an insight into any differences, of the type of support offered/provided and whether CMC facilitates this.

There was a clear indication of types of maintenance strategies used for close relationships, and motivations for keeping these relationships. However, further work is required on weak relationship ties and the motivation for keeping these relationships. Individuals with
exclusive online close friendships would need further investigating. Our research project viewed usage patterns and experience from the ego’s perspective and it was unclear whether the alter viewed or benefited from the relationship in the same way as the ego. A research project of both alters and egos in exclusive online friendships would provide some clarity on intimacy levels, communication content and preferred CMC mediums.

The framework from chapter 5 divides individuals into four categories. Our research project shows individual preferences and usage depend on their real world circumstances. High socialisers may show different patterns of CMC use, compared to low socialisers. Future studies could select one of the categories and measure the strength of relationship intimacy with CMC use. This would be a concentrated study on a selected group of users and would offer some insight into the benefits or limitations of CMC with regards to relationship maintenance, and whether/how CMC is used to substitute for, or facilitate, real world relationships for a particular group of individuals.

Finally, future work could involve a deeper study into the Pashtun diaspora and their social network both in Pakistan and the UK. The study could further investigate the patterns and motivations of CMC use, and how culture can impact on communication content. Of particular interest is whether SBH applies to the Pashtun Diaspora, given the cultural constraints that interact with their CMC use in maintaining relationships.
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## Appendices

### Appendix A – Chapter 4

List as many of your best and close friends – up to 20 if you can (use abbreviated names to make their identity anonymous)

- **Kin** = Parent, siblings, grandparents, uncles, aunts, cousins and those related through marriage
- **Best Friend** = Share intimate information, secrets, someone you call upon in an emergency
- **Close Friend** = Share gossip, general help and advice
- **Acquaintances** = Someone you say hello to and general formalities – work colleagues, classmates and etc

<table>
<thead>
<tr>
<th>Gender</th>
<th>Relationship to you (kin or friend)</th>
<th>Please say how close the person is to you, closeness on a scale of 1-10. (10 being the closest)</th>
<th>Is this person on your SNS friend list</th>
<th>Other method of communication – e.g. phone, social network, SMS, Skype and etc</th>
<th>Where did you first meet this person in the real world</th>
<th>How many years have you known each other</th>
</tr>
</thead>
<tbody>
<tr>
<td>M=Male</td>
<td>K=Kin</td>
<td>F=Female</td>
<td></td>
<td>FB = Facebook</td>
<td>MS = MySpace</td>
<td>MSN = Messenger</td>
</tr>
<tr>
<td>KL</td>
<td>M</td>
<td>F</td>
<td>7</td>
<td>FB</td>
<td>Phone</td>
<td>S</td>
</tr>
</tbody>
</table>
SECTION ONE. INTRODUCTORY QUESTIONS

Age: 
Gender: Male ☐ Female ☐ 
Occupation: Student ☐ Private Sector ☐ Public Sector ☐ None ☐ 
Nationality ______________________ 

Before attempting the questions, please read the following definitions: 
• Local = within 50 miles 
• Distant = over 50 miles 
• Family = parents, siblings, grandparents, uncles, aunties, cousins and those related through marriage. 
• Best Friend = share intimate information, secrets someone you call upon in an emergency 
• Close Friend = share gossip, general help and advice 
• Acquaintances = someone you say hello to and general formalities – work colleagues, classmates and etc 

Enter your preferred method of communication on a 1:6 scale for each cell in the following table (1 being the most preferred and 7 being the least). *Please do not repeat the same number in one row. See example. 

<table>
<thead>
<tr>
<th>Relationship Type</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Face to Face</td>
</tr>
<tr>
<td>Family (local)</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Rank across</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Relationship Type</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Face to Face</td>
</tr>
<tr>
<td>Family (local)</td>
<td></td>
</tr>
<tr>
<td>Family (distant)</td>
<td></td>
</tr>
<tr>
<td>Best Friend/s (local)</td>
<td></td>
</tr>
<tr>
<td>Best Friend/s (distant)</td>
<td></td>
</tr>
</tbody>
</table>
### SECTION TWO. COMMUNICATION

1. Tick the frequency and method/s used when communicating with:

   a) **Best Friends (local)** – tick one or more. N/A □ (automatically set to move to next option)

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Face to Face</th>
<th>Phone</th>
<th>SMS (text)</th>
<th>Email (hotmail, gmail, outlook and etc)</th>
<th>Social Networking Site (SNS)</th>
<th>MSN</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. At least once a day</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>2. At least once a week</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>3. At least once a months</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>4. At least once a year</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>5. Hardly ever</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

   b) **Best Friends (distant)** – tick one or more. N/A □ (automatically set to move to next option)

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Face to Face</th>
<th>Phone</th>
<th>SMS (text)</th>
<th>Email (hotmail, gmail, outlook and etc)</th>
<th>Social Networking Site (SNS)</th>
<th>MSN</th>
</tr>
</thead>
<tbody>
<tr>
<td>6. At least once a day</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>7. At least once a week</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>8. At least once a months</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>9. At least once a year</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>10. Hardly ever</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

   c) **Close Friends (local)** – tick one or more. N/A □ (automatically set to move to next option)
<table>
<thead>
<tr>
<th></th>
<th>Face to Face</th>
<th>Phone</th>
<th>SMS (text)</th>
<th>Email (hotmail, gmail, outlook and etc)</th>
<th>Social Networking Site (SNS)</th>
<th>MSN</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.</td>
<td>At least once a day</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>12.</td>
<td>At least once a week</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>13.</td>
<td>At least once a months</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>14.</td>
<td>At least once a year</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>15.</td>
<td>Hardly ever</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

d) Close Friends (distant) – tick one or more. N/A ☐ (automatically set to move to next option)

<table>
<thead>
<tr>
<th></th>
<th>Face to Face</th>
<th>Phone</th>
<th>SMS (text)</th>
<th>Email (hotmail, gmail, outlook and etc)</th>
<th>Social Networking Site (SNS)</th>
<th>MSN</th>
</tr>
</thead>
<tbody>
<tr>
<td>16.</td>
<td>At least once a day</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>17.</td>
<td>At least once a week</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>18.</td>
<td>At least once a months</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>19.</td>
<td>At least once a year</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
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</tr>
<tr>
<td>20.</td>
<td>Hardly ever</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

e) Family (local) – tick one or more. N/A ☐ (automatically set to move to next option)

<table>
<thead>
<tr>
<th></th>
<th>Face to Face</th>
<th>Phone</th>
<th>SMS (text)</th>
<th>Email (hotmail, gmail, outlook and etc)</th>
<th>Social Networking Site (SNS)</th>
<th>MSN</th>
</tr>
</thead>
<tbody>
<tr>
<td>21.</td>
<td>At least once a day</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>22.</td>
<td>At least once a week</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>23.</td>
<td>At least once a months</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>24.</td>
<td>At least once a year</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
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<td>☐</td>
</tr>
<tr>
<td>25.</td>
<td>Hardly ever</td>
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</tbody>
</table>
**SECTION THREE. SOCIAL NETWORKING**

**The remainder of the questionnaire is for participants with Social Networking accounts. If you do not have one then you have completed the questionnaire, Thank You.**

1. Which social networking sites (SNS) have you signed up to?

a. MySpace  |  b. Facebook  |  c. LinkedIn  |  d. Bebo  |  e. Orkut  |  __Other

If other, please specify__________________________________________________________
2. How often do you sign into your account?

1. At least once a day □
2. At least once a week □
3. At least once a month □
4. At least once a year □
5. Hardly ever □

3. If you have made new friends through SNS, how did you meet?

1. Mutual friends □
2. Similar interests □
3. Responding to a friends request □
4. Invitation □
5. Other □

If other, please specify________________________________________________

4. Did you sign up to SNS to:

1. Make new friends □
2. Keep in touch with existing friends □
3. Find old friends □
4. Keep in touch with family □
5. Networking □
5. Which of the following methods using SNS do you use when communicating with the following?
Tick all that apply

<table>
<thead>
<tr>
<th>Relationship Type</th>
<th>Method</th>
<th>Wall Posts</th>
<th>Pokes</th>
<th>Private Messages</th>
<th>Share Photos</th>
<th>News Feeds</th>
<th>Applications (games, video &amp; etc)</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family (local)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family (distant)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Best Friend/s (local)</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Best Friend/s (distant)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Close Friend/s (local)</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Close Friend/s (distant)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acquaintance/s (local)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acquaintance/s (distant)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If other, please specify________________________________________________

6. Please estimate total number of friends including acquaintances ______
Of these %_____ in Facebook

7. Please estimate total number of close friends (see previous definitions) ______
Of these %_____ in Facebook

8. Please estimate total number of very good friends (see previous definitions) ______
Of these %_____ in Facebook

9. Please estimate total number of family (see previous definitions) ______
Of these %_____ in Facebook
Appendix C – Chapter 5

Interviews questions

Part 1 – Relationships

1. How frequently do you communicate with (kin, best friends and close friends (use initials))? – how? What method?
2. How often do you see A best friend, B close friend
3. What do you do socially together?
4. Do you depend on this person for support? – give me an example
5. Do you have relationships that you maintain at a distant? Please tell me about these
6. You have had a bad day, do you contact friends? If so, how? – how do they help?
7. How would you react if your best friend had a life threatening accident? How would you communicate with them, and your friends?
8. How would you react if a significant political or social crisis happened in the country where your family or best friends lived? How would you communicate with them? How would you support them? Could you tell me about a specific experience?

Part 2 – Online Social Relationships & General technology use

1. What is your main method of keeping abreast of what is happening with your; a. family, b. best friends and c. close friends? For example, the latest news, gossip and arranging social gatherings
2. Which type of technology do you use to maintain your relationships?
3. How long have you used this technology?
4. Is this your preferred method?
5. Does this method ever cause misunderstanding in your relationship/s? Can you tell me about a specific time when this happened and why?
6. Does it make a difference that you do not see the person you are communicating with? How so?

Part 3 – SNS technology use

1. Do you have a social network account? If so, which one and why?
2. How long have you had this account for?
3. How often do you log in? has this always been the case?
4. Have you adopted SNS technology to maintain your relationships? How? If so, with which relationships (family, friends, acquaintances)?
5. Have you ever exaggerated personal facts on your personal profile? Why?
6. Are you more likely to lie online that face-to-face?
7. Are you more open with others using social network sites?
8. Do you share personal photos, videos etc with everyone on your social network site?
9. From the top of your head how many people do you have in your contact list? – How many of these are your Best/Close friends
10. Have you made useful contacts using social network sites? If so, in what way?
11. Have you made more friends due to using social network sites? – if so, has this benefitted you? For example, more people to talk to, share activities, ideas
12. Have you every manipulated photographs or used images to change/protect your identity on your site? Could you describe an experience you have had?
13. What is the best or worst experience using the technology?
14. What is the best feature using the technology?
Appendix D – Chapter 7

Diary Contact Record

This is for persons contacting family and friends in Pakistan

<table>
<thead>
<tr>
<th>Date</th>
<th>Start Time</th>
<th>Please comment on the following questions</th>
<th>Comments</th>
<th>End Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nov 1(^{st}) – 09 Example</td>
<td>5:15pm</td>
<td>What method did you use to contact friends/family – for example – Phone, Skype, MSN or Facebook or Email</td>
<td>phone</td>
<td>5:45pm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Who did you contact – Friend or Family? Use Initials for example Henry James would be ‘HJ’ Indicate with ‘Kin’ Mother, father, Cousin Indicate Friend closeness</td>
<td>Family – Mother &amp; Father</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>What was the nature of your conversation? – Please state specific – for example – whether your conversation was general formalities, personal issues or social political.. please provide as much details as you can</td>
<td>My mother was sick and we talked about her health concerns. I spoke to my father about some medication for my mother. He said he would call me back and let me know what the doctors said regarding my mothers health. We briefly spoke about the well being of the rest of the family</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date</th>
<th>Start Time</th>
<th>Please comment on the following questions</th>
<th>Comments</th>
<th>End Time</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>What method did you use to contact friends/family – for example – Phone, Skype, MSN or Facebook or Email</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Who did you contact – Friend or Family?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>What was the nature of your conversation? – Please state specific – for example – whether your conversation was general formalities, personal issues or social political.. please provide as much details as you can</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix E – Consent Forms

University of Manchester
Faculty of Humanities
Manchester Business School

Ethical Approval

Participant Information Sheet

What is the title of the research?

Computer Mediated Communication, Social Networking Sites and Maintaining Relationships

Who will conduct the research?

Hatana El-Jarn – Post graduate student at the Manchester Business School

What is the aim of the research?

To learn about your use of computer mediated communication technology with your best friends, close friends, kin and acquaintances. You will be asked on the frequency and quality of your technology use

Why have I been chosen?

You have been chosen because you have volunteered to participate. You have also stated that you are familiar with computer-mediated technologies

What would I be asked to do if I took part?

A. Answer questions
B. Answer online questions
C. Participate in a semi structured interview
D. Complete a Diary of your communication content, type of technology used and the length of time

What happens to the data collected?

Analysed and presented in a PhD thesis. Some results may be published in selected journals

How is confidentiality maintained?

Pseudo names will be used where appropriate. No personal or identifiable information will be published

What happens if I do not want to take part or if I change my mind?

You may withdraw from participation at any time

Will I be paid for participating in the research?
You may receive an Amazon voucher

**What is the duration of the research?**

Questionnaire = 30 mins  
Online Questionnaire = 45 mins  
Semi Structured Interviews = approx. 90min  
Diary Study = 3 months

**Where will the research be conducted?**

Online Questionnaire = Internet – URL provided  
Semi structured interview = In your home, or where you are comfortable  
Diary Study = where appropriate to collect data

**Will the outcomes of the research be published?**

Possibly

**What benefit might this research be to me or other subjects of the research?**

You may learn about your patterns of Computer mediated technology use, the number of friends you have

**Contact for further information**

Hel-Jarn@postgrad.mbs.ac.uk

**What if something goes wrong?**

Contact Hatana El-Jarn
PARTICIPANT CONSENT FORM

[To be completed by each participant]

If you are happy to participate in this study, please complete and sign the consent form below.

I confirm that I have read the attached participant information sheet and have had the opportunity to consider the information and ask questions, and had these answered satisfactorily.

I understand that my participation in the study is voluntary and that I am free to withdraw at any time without giving a reason and without detriment to any treatment/service.

I agree to take part in the above research project.

Name of participant: __________________ Signature: __________________ Date: ___________

Name of person taking consent: __________________ Signature: __________________ Date: ___________