Negotiating Social Practices: The Role of Ubiquitous Computing In Students' Lives

by

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Abstract

This thesis explores how the digital divide goes beyond issues of access. In addition, I argue that the concept of a digital generation, or digital native is too simplistic. While young people are more dependent on ubiquitous computing devices such as cell phones, the way they are interpreting and using these technologies, even among users with the same access to ICTs, is different and varies from user to user. My research shows that while Carleton students see their use of mobile technology as increasingly and undeniably central to the way they communicate, form and express their social identities and form collectivities, the way they are using these technologies and the meaning they assign them is fluid and changeable, forcing them to constantly negotiate with each other what kind of cell phone use is appropriate.

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Glossary of Terms:

ANT: Actor-Network Theory

ICT: Information Communication Technology

CMC: Computer Mediated Communication

SCOT: The Social Construction of Technology

Chapter One: Introduction & Methodology

I have chosen to write on the integration of cell phones and young people for two reasons. First, because young people are arguably the most influenced by the changes being brought about by the introduction of information and communication technologies (ICTs), both as a generation and by virtue of their place in the course of life, as those born after the 1990s have grown up surrounded by digital technologies. According to Sheila Henderson, Rebecca Taylor and Rachel Thomson's (2002), "young people's positioning within the life course makes them acutely aware of the need to utilize new technologies in order to realize opportunities for personal improvement and development, as they have never known a world without the digital technologies they are using on a daily basis" (494-495). Second, because cell phones have arguably become the most prevalent and influential computing device within our society (Puro, 2002; Pernsky, 2004), and understanding the multiple, overlapping consumption and uses of mobiles in social and cultural life, and their many meanings, is essential in order to address questions about the future and impact of cell phones within our society. The importance of smartphones in users' daily lives was reinforced through the findings of my sample, as it spoke to how these technologies had become parenting devices, day planners, navigation devices, and alarm clocks. In addition, all of the participants talked about how their phone has given them freedom from their overly protective parents and workplaces, to always having to be at home in case their elderly relative has an emergency. The objective of this thesis is to provide some theoretical insights into how the integration and prevalence of smartphones as a proxy for computer mediated communication (CMC) is transforming everyday social interactions.

Study Design:

The data for this study was gathered by interviewing participants between the ages of 17 to 26 on a completely voluntary basis. The mean age of participants was 19.5, with a median age of 22 and a mode of 22. This age range was chosen because they are the first generation to have grown up since birth with access to ICTs, and are the most affected by these new forms of communication (Prensky, 2001a). The interviews were conducted over a three-week period and the sample population was comprised of 11 university students attending Carleton University, living within the Ottawa area. The sample demographic included both domestic and international students and was a convenience sample comprised of ten females and one male (n=11). One possible explanation for why more women volunteered than men is suggested by each gender's approach to technology, and the study's focus on use. The female participants appeared to have thought about how their cell phones use was transforming their daily activities, and not about the technical specifications of their phone. The male participant, however, started out talking about the technical specifications of his smartphone, and had to be guided towards how his phone might be shaping his social behavior. Another possible reason for this sample's gender gap is that, while there has been a general decline in people volunteering, traditionally women used to volunteer more than men due to having more flexible hours as they were working part-time jobs (Taniguchi, 2006). This is still the case, "despite the changing gender attitudes and the rapid entry of women into the labor force over the past several decades" (Taniguchi, 2006). Taniguchi's findings apply to this study as all of the women who participated were either in school full time and/or working part time, whereas the man was not in school and was working full time. This sample

cannot be considered representative of Ottawa students, or as presenting an accurate portrayal of Canadian society, but exploratory research such as this will hopefully help to highlight the impact smartphones are having on social interactions. In addition, this thesis conducted a literature review in order to build a firm theoretical foundation, and to acknowledge the scholarly work already performed on young people and CMC.

Sample Eligibility and Characteristics:

While non-users of communication technologies are important and impacted by them, as not using ICTs can result in a sense of disconnection, or missed socioeconomic opportunities, this thesis focuses specifically on Canadian users of mobile technologies between the ages of 17 to 26. This study uses the term mobile device and not smartphone, because while the majority of participants (10 out of 11) used smartphones, two used non-smartphones; the first for daily use, and the second kept her old phone as a backup. In addition, this thesis does not look at the Global South, and instead focused on privileged North American mobile technology users, due to geographical convenience.

This study began by submitting all of the documentation as well as a description of the processes it utilized, to the Carleton's Research Ethics Board for review, receiving clearance on March 28, 2013 (appendix a). The first eight participants for this study were recruited through a mass e-mail invitation sent out by the Sociology and Anthropology department at Carleton University in search of research volunteers (appendix b). The last three participants were volunteers who heard about this study through mutual acquaintances and were interested in participating. In order to ensure that their answers had not been indirectly or directly influenced, this study rejected any participant that was not at least two degrees separated from the researcher. In addition, this study rejected any

participant that might come into contact with the researcher while they held a position of authority or influence over them, such as being their teaching assistant. Finally, all of this study's participants were given pseudonyms to ensure their confidentiality.

The Limitations and Advantages of the Methodology:

The methodology used within this study was a qualitative approach that utilized semi-structured interviews and asked participants to keep a technology journal of their usage for one day (appendix c). This study utilizes interviews due to the rich data they are able to provide, while also giving researchers the structural flexibility to follow up on participants' responses. This meant that this study was able to explore the impact of cell phones on social interactions in more depth than would have been possible through a survey. In order to prepare for these interviews, this study began by conducting four pilot interviews during the 2013 winter term in order to develop and refine its final interview questions. The more successful questions that got participants talking about their experiences were incorporated into a final, semi-structured interview guide for this study (appendix d).

This study then conducted eleven semi-structured interviews asking students about their cell phone use. In these interviews, participants were required to sign an informed consent form, which they received a copy of, and included the researchers contact information as well as his superiors and the Carleton Ethics Board in case they wished to make a complaint (appendix e). In addition, all of the participants were supplied with the information for free, local, and anonymous support services, should they wish to talk to someone or require counseling as a result of this research. The interviews were on average approximately 40 minutes long.

After the interview, participants were asked to submit a technology journal outlining how they used their computer and cell phone on a daily basis. These journals were meant to highlight how integrated cell phones have become into Canadian society, while potentially revealing unpredicted themes. However, many of the participants did not submit a technology journal, even when reminded after their interview. To address the fact that participants were not submitting technology journals after the interviews, participants were asked during the interview to describe how they used their phone during a normal weekday. One of the final advantages of using interviews to gather data was that it allowed this study to gather data from participants that might not have the technological competence or language skills necessary to take a survey.

Some of the limitations of this study are the use of a convenience sample as opposed to a randomly selected sample. Consequently, this limited sample size means that the data obtained from the interviews cannot be applied to a larger population. In addition, since the sample is comprised of university students, there is very little information on the effects of Internet usage among non-students, pre-secondary students and older generations. Finally, it is important to note that the participants for this study fall on the privileged side of the digital divide as they have attended, or are attending university, are living within Canada and the majority of them have grown up from birth with access to ICTs.

How the Data was Analyzed and Coded:

All of the interviews were recorded and then transcribed for analysis and coding. The data was then printed out and coded in order to uncover general themes, and to gain an in-depth understanding of what the data contained. The data was then recoded into

specific events and themes in order to begin building a theoretical framework. Finally, the data within this study is presented in a quotation format in order to help preserve the voice of the participants.

Outline of Thesis:

Chapter two presents a review of literature, while outlining predictions about the future of communication technologies made by theorists examined in this thesis. It begins by outlining how the introduction of ICTs is resulting in a technological revolution as they are changing the way individuals socialize, communicate, travel, work and store information (Castells, 2000). In addition, chapter two engages with and critiques the two most common approaches to analyzing technological social change, the digital native (Prensky, 2001a), and the digital divide (Van Dijk, 2006). Chapter two then draws upon the work of Richard Ling and Brigitte Yttri (1999) to show how mobile phones are restructuring and becoming extensions of users' identities. As the normalization of the Internet and mobile phones are changing the structure of our societies, to the point that theorists such as Marc Prensky (2001a), Don Tapscott (1999), William Strauss and Neil Howe (2008) argue that these technologies are the distinguishing feature of young people today. As "major aspects of [young people's] lives-social interactions, friendships, civic activities-are mediated by digital technologies. And they've never known any other way of life" (Palfery & Gasser, 2008:2). Finally, chapter two examines the historical evolution of cell phones from their predecessors the landline and personal computer. I then unpack how users are becoming techno-social hybrids as their phones have become extensions of their physical form, as these technologies allow user to be connected to each other 24/7 through the creation of in-between spaces. Chapters three starts with the assumption that

humanity is now living in a digital age, and begins by redefining cell phones as mobile devices. It goes on to illustrate that young people are becoming more dependent upon ICTs, interpreting and assigning different meanings to their phones as these technologies are becoming integrated into contemporary society. Chapter four dismisses the myth of universal practices and examines how young people's use of mobile devices and the meanings they associate with them have contributed to the creation and stabilization of different social practices. Chapter five, analyzes the shift from face-to-face to digitally mediated interactions as they transform established communicative practices, forcing users to constantly negotiate with each other what kind of mobile device use is appropriate. Finally, chapter six concludes the thesis and outlines some additional research questions for future researchers.

The Internet is among the few things humans have built that they do not truly understand. What began as a means of electronic information transmission has transformed into an omnipresent and endlessly multifaceted outlet for human energy and expression. It is at once intangible and in a constant state of mutation, growing larger and more complex with each passing second.
- Schmidt and Cohen (2013:3)

Chapter Two: Literature Review

In the twenty-first century, it is becoming evident that the cell phone has rapidly developed into more than just a communication tool. It is starting to profoundly affect and become deeply embedded into the social, political and cultural fabric of users' daily lives. Manuel Castells (2000) argues that a technological revolution is taking place, changing the way we live by changing the way individuals socialize, communicate, travel, work and store information. Castells' work examines society on a global scale. He argues that culture, organizations, and large institutions have been greatly affected and forever altered by the introduction of new technologies, such as cell phones, computers, iPads, cameras etc (Castells, 2000:9). According to Castells (2009), one of the major ways the Internet and by proxy cell phones have dramatically changed communication accordingly is constant connectivity. This concept of connectivity refers to how individuals can now be connected 24/7, creating a pressure for users to be in contact, as these new types of networking technologies allow us to gather together globally, communicate and learn from one another instantaneously. While Castells focuses mostly on the macro changes brought about by information communication technologies, Barry Wellman's (2003) work shows that ICTs are also affecting individuals in his concept of networked individualism. He argues that the Internet has become a tool that has changed society on an individual level, as users have constant access to information at our

fingertips. Since the inception of the technological revolution most students have learned to acquire information with continuous access to an unlimited amount of knowledge, which is available over the Internet. This system of networked individualism, Wellman (2003) argues, is molding the way that future generations will learn, interact, portray their identity, as well as the way they work and become educated. Castells and Wellman's hypothesis that the introduction of ICTs is transforming our societies is reinforced further by the work of Henderson, Taylor and Thomson's (2002), who state that "due to an increasingly individualized late modern life, where a progressive freeing agency from structure demands that individuals must be active and creative... In this context reflexive social ties and networks are chosen rather than ascribed, needing to be established, maintained and constantly reviewed by individuals" (494-495). In addition, as suggested earlier Henderson, Taylor and Thomson (2002) research shows that young people are in the forefront of the communication revolution inferred by Castells, as computer and Internet use is becoming ubiquitous within our societies. However, while Castells is right and the introduction of ICTs is dramatically affecting how people communicate it is important to recognize that these new technologies do not benefit everyone equally. This results in a gap called the "digital divide" (Van Dijk, 2006), between those who have access to ICTs and those that do not. While "the international 'digital divide' is closing as a steady fall in worldwide costs of telephone and broadband Internet services has enabled a number of developing countries to expand their access to information and communication technology" (UNESCO, 2012), this thesis explores how the digital divide goes beyond issues of access. In this thesis I argue that the concept of a digital generation, or digital native is too simplistic. While young people are more dependent on

ubiquitous computing devices such as cell phones, the way they are interpreting and using these technologies, even among users with the same access to ICTs, is different and varies from user to user. My research shows that while Carleton students see their use of mobile technology as increasingly and undeniably central to the way they communicate, form and express their social identities and form collectivities, the way they are using these technologies and the meaning they assign them is fluid and changeable, forcing them to constantly negotiate with themselves and each other what kind of cell phone use is appropriate.

The argument that technology influences society is not a new one, and dates back to Plato's critique of writing. Plato believed that the act of writing was not healthy because it damaged the way individuals were able to store and remember information. It meant people did not have to actively remember what they were taught, but instead wrote it down. While Plato may have been right, and writing things down makes people forgetful and lazy, it has also contributed to the development of the civilized world as information could be accurately retained and shared for future generations and scholars (Crome, 2002:3). In the same way, modern technologies have changed people's abilities to store information, (remembering contact information or noting birthdays, for example), and it has in some ways encouraged human idleness. On the other hand, the new information communication technologies have also made aspects of our daily lives easier. In the business world, employees are able to have group conference calls, which allows them to exchange ideas globally. In the political world, people can now be updated continuously on worldwide news and global events. And in terms of human relationships, technology has become an aid in long-distance relationships, making it possible for

couples to stay in touch. The degree in which ICTs are impacting society, their potential benefits and consequences are widely and fiercely debated by academics such as Marc Prensky (2001a) who coined the term digital natives, Neil Postman (1992) a media and cultural critic, Don Tapscott (1998) a business technology consultant, and Marshall McLuhan (2003) a philosopher of communication theory. They all agree, however, that the nature of communication has been dramatically changed since the introduction of the most prominent ICT, the Internet, in the early 1990s, allowing greater global communication.

Digital Generation, Digital Natives:

The two most prominent ways researchers are talking about the impact of ICTs in contemporary society, in terms of how ICTs are resulting in the formation of a digital generation made up of digital natives (Prensky, 2001a; Tapscott, 1998), or the digital divide, a concept that focuses on who has access to ICTs (Van Dijk, 2006). The concept of a digital generation, comprised of digital natives, is based upon the work of theorists Marc Prensky (2001a) Don Tapscott (1998) and William Strauss and Neil Howe (2000). They argue that the use of technology has become the distinguishing feature of youth today, as they have grown up in the digital age, surrounded by digital technologies. These technologies include any kind of computing device, such as cell phones, the Internet, tablet computers, iPods and so on. They also include information and communicative technologies made available through the Internet, such as e-mail and social networking sites. Prensky (2001a),” argues that advancements in communication technologies have led to the creation of a web 2.0 generation that has grown up within the online sphere. This generation is characterized by the large number of individuals within developed

countries who can now have an online presence through technologies such as tablet computers, laptops, and cell phones, without the effort it was for previous generations. Prensky argues that the ubiquity of computing access results in a cultural shift in which individuals become “digital natives,” a term he uses to refer to those who were born after the early 1990s, subsequent to the general introduction of digital technologies such as the Internet. Through interacting with digital technology from an early age, these digital natives have a greater understanding of how new technologies work, and a mindset and attitude toward technology, of “wanting to get their hands on the latest and greatest and approach new technologies with the confidence that they can always figure it out” (Prensky, 2010: 11). Some of the characteristics Prensky (2001) highlights that make digital natives distinct from previous generations is that by the time they are in their twenties they will have spent more than 30,000 hours on the Internet and playing video games; they prefer to connect via text, social media, or the Internet and these interactions are as real, and often more pleasurable and tangible, than offline life; they are using the Internet not only to access information, but are also contributing to it through mediums such as blogs and YouTube videos (Prensky, 2001a, 2001b; Rosen, 2010). These individuals prefer receiving information quickly and simultaneously from multiple multimedia and other sources, and use texting and instant message shorthand such as cu¹ tomorrow, luv ya², r u³ going to the game? (Prensky, 2001; Rosen, 2010). In short, Prensky (2001a) and Tapscott (1998) argue that young people’s use of technology makes them distinct from previous generations, as ICTs have become the tools that they are using to experience the world and differentiate themselves from previous generations.

¹ Cu is short form for “see you”.

² Luv ya is short form for “love you”.

³ R u is short form for “are you”.

This conception of digital natives is shared by Diana and James Oblinger (2005) who used the term “net-generation.” William Strauss and Neil Howe (2000) use the term “Millennials” to describe this same generation of youth. While this thesis agrees with most of the literature already conducted on digital natives, as suggested earlier it argues that the concept of a digital native is too simplistic, and that the use of technology alone does not make a generation distinct. Instead, this thesis argues that the numerous ways individuals are using cell phones results in the formation of multiple mobile cultural configurations. For example, the mobile cultural configuration shifts in response to its purpose, so the social practices and terminology a business owner follows will be different from the configuration of a teenager’s mobile culture, or the practices between good friends and acquaintances.

The Digital Divide:

The second way researchers have traditionally examined and analyzed the integration of ICTs into contemporary society is the digital divide (Van Dijk, 2006). The digital divide is the second main perspective used within communication studies that examines the socioeconomic inequality of different social groups. The concept of a digital divide became prominent in the late twentieth century with the rise of the personal computer and cellular telephone. The digital divide is a mainly economic perspective “commonly defined as the gap between those who have and do not have access to computers and the Internet. Before that time more general concepts were used such as information inequality, information gap or knowledge gap and computer or media literacy” (Van Dijk, 2006). Academic research conducted on the digital divide throughout the 1990s focused on the inequality of different social groups by measuring their access to and

consumption of information communication technologies. The digital divide was popular because it could be used to measure the ICT's disparities on a global scale among countries as well as an individual scale and everything in between, such as businesses, education institutions and households. The digital divide as a tool for analysis focuses on questions such as, who is accessing the Internet? What are the socio-economic characteristics of the individuals accessing the Internet? What types of technologies are users using to access the Internet? And how do large institutions enable and encourage more users to access and utilize ICTs? While the digital divide remains important today, and economic factors still play a major role in who has access to ICTs, current research fails to recognize how the digital divide goes beyond issues of access as digital inequality can come in many forms.

The need to shift from looking at the digital divide to looking at differences in users' usage of ICTs is illustrated by Alexander Deursen and Jan Dijk (2013) who did a representative survey of the Dutch population. They "found that people with low levels of education and disabled people are using the Internet for more hours a day in their spare time than higher educated and employed populations" (Deursen & Dijk, 2013:1). However, they found that lower educated and disabled people were using the Internet for leisure, entertainment and socializing and not capital-enhancing activities. Katy Pearce and Ronald Rice (2013) argue that digital inequality can take many forms. Their study shows how although mobile Internet is available for those on the wrong side of the digital divide, it is important to analyze not only a user's ability to access ICTs, but also their activities. Their study uncovered that users in less developed countries do not use them to engage in as many social or capital-enhancing activities, decreasing the potential benefits

of ICTs, due to factors such as education, gender and age and the amount of time they could spend online. Pearce and Rice's (2013) study also illustrates why it is important to examine usage, as users "with higher economic well-being are more likely to use the Internet for work, communication, business, or education" (728), while disadvantaged users were less likely to use email, participate in forums and use search engines.

Similar to Pearce and Rice (2013), this thesis agrees that the digital divide is too simplistic, and that researchers of new communication technologies have to move beyond the concept of access. My argument against using the digital divide to analyze technological change is two-fold: it ignores many of the complex socio-political factors present today, and it is also less important for this thesis's specific focus on the use of cell phone technologies, which have a lower access barrier than many other communication technologies, including laptops and desktop computers (Hermanns, 2008:76). In addition, non-smartphone cell phones are also cheaper than computers, and have a lower user knowledge entry level, resulting in them becoming the most prevalent communication device within our society (Puro, 2002; Prensky, 2004). John Beaton and Judy Wajcman (2004) echo this by stating that cell phones and smartphones are emerging as multi-modal channels of communication and as important repositories for personal information and content creation.

While both the concepts of a digital native and the digital divide have provided insights over the years, the concept of a digital native is too general, and fails to address the fact that there is a digital divide among different user groups and the intricate ways users are using these technologies. The digital divide's focus on the inequality of access between groups fails to address how there can be inequality among users within the same

social group due to factors such as education and social status. Given these limitations, this thesis critiques Prensky's (2001a) concept of a digital native, and stresses the importance of symmetry in an analysis of how users of cell phones and the technology itself are reshaping each other and involved in a process of negotiating technical culture, as the technology and its user are forming symbiotic relationships with one another.

Actor-Network Theory and the Techno-social Hybrid:

The idea that users and technology can form symbiotic relationships was first suggested in 1964 by Marshall McLuhan when he said, "a medium [or technology] is an extension of the human body or the mind" (McLuhan 2003: xiv). Bruno Latour (1999) expands on the theory that humans and technology can form symbiotic relationships in his book *Pandora's Hope*, using the example of a gunman. The example of the gunman illustrates how humans and technologies can form symbiotic relationships, and are a combination of both social and technical elements, resulting in the creation of a new entity or identity. This argument is grounded in Latour's hypothesis that "you are different with a gun in your hand; the gun is different with you holding it. You are another subject because you hold the gun; the gun is another object because it has entered into a relationship with you" (Latour, 1999:179); you have become inseparable, a hybrid entity, a gunman. This is based upon the argument that when you combine multiple things you have created something new. For example, if you combine graphite and wood, it is no longer its base elements, but a new entity known as a pencil; which you could then combined with a human resulting in a writer, a teacher and so on. These new combined identities transform how people move through the world, for example the gunman may inspire fear,

or loyalty depending on whether or not they are a criminal and use the gun to rob individuals, or a policeman that protects them.

This shows that it is not the simply categorization of these new techno-social hybrids⁴, or entities that define them: “a gunman,” “a writer,” or a “cell phone user,” but how users are using interacting with each other using the technologies they have merged with. In this way, I argue that using new technologies may put young people into general categories such as “a cell phone user,” “a gunman,” or “a digital native,” it is the ways in which these techno-social hybrid manifest themselves within our societies that give them meaning and defines them. For example, while young people may meet all the criteria for being a digital native, (such as having spent 20,000 hours online by the age of twenty, and preferring to text rather than talk, and use short form words) simply saying they are digital natives does not help researchers understand the different usage patterns among users, or the assigned meanings and symbiotic relationships users are forming with their phone.

The interpretation that users are forming intimate relationships with their cell phones and assigning them meaning is best expressed through the work of Finnish researchers Richard Ling and Brigitte Yttri (1999). Their work on cell phone use and human interactions are heavily structured by the theoretical arguments of Erving Goffman. They build upon Goffman’s ideas to analyze the nonverbal ways that users signify, or communicate meaningful social identities and communicative practices such as the beginning and ending of cell phone conversations. Ling and Yttri’s (1999) work emphasizes how the transformation of individuals’ social behavior and identity is shaped

⁴ The word techno-social is a word used by many researchers to describe the concept that all technology is social in its manifestation (Case, 2008).

by the adoption of cell phones into popular culture, and highlights how cell phones are resulting in new forms of interactions called *micro-coordination* and *hyper-coordination*. Micro-coordination refers to the use of cell phones by social groups to coordinate their meeting time and/or place as the need arises. Hyper-coordination goes beyond the simple time/place coordination, and takes into account the type of cell phone that is appropriate for different circumstances, the way in which it is carried on the body, and the places in which it is used. Thus, hyper-coordination encompasses the instrumental and the expressive use of the cell phones as well as structures regarding the presentation of self (Ling & Yttri, 1999:2). An example of hyper-coordination, or when technologies move beyond being the technologies' physical form and their inventor's original intentions, is how the brand and type of phone you own says something about you. For example, if you own an iPhone, you might be considered young and popular, whereas business professionals often use blackberries, since they have better security and privacy protection (BlackBerry, 2012). Ling and Yttri's work reinforces this thesis's claim, and shows how the impact of cell phones goes beyond their physical forms, to the meanings and identities they represent.

In addition, Ling and Yttri's (1999) research suggests the reasons that ICTs and by proxy cell phones have become central to young people's daily lives. Their research shows that the prevalence of cell phones within modern societies is resulting in a more fluid society, as users no longer have to stay at home to access the Internet, receive phone calls, and can now send and receive information almost instantaneously while on the go (Ling & Yttri, 1999). The work of Ling (2007) shows that "teens are, perhaps the most

consummate mobile telephone users. Teens have made text messaging into a common form of interaction” (2).

They use the camera to share photos of enticing members of the opposite sex and to gather peer opinion on the color of potential clothes purchases. The mobile phone is a safety link, it allows for effective coordination, it is an object lesson in the use of money for teens and often, it is a reluctantly accepted umbilical cord to their parents and a central artifact of their self-image (Ling, 2007:2).

Finally, Ling’s work shows two important changes in young people’s cell phone use:

first, that they are forming relationships with their phones, assigning them meanings and communicating nonverbally, by reshaping their behavior. Second, individuals are no longer differentiating among using a cell phone to directly communicate with other users, using their phone as an extension of their social and economic identities and status, or other modalities of interaction such as the use of video chat, social media and images.

The only interactions users are differentiating between are computer mediated communication (CMC) and face-to-face interactions, as face-to-face interactions are more risky as users are emotional and physically vulnerable and can be held accountable. This allows users to avoid uncomfortable situations, or physical harm, that might result from something they said, as they do not have to be within close physical proximity in order to communicate. The term computer-mediate communication (CMC) was invented and coined by Starr Hiltz and Murray Turoff in (1978), to refer to any human interaction or communicative exchange through the use of two or more electronic devices. Simply put, as defined by Marshall McLuhan, cell phones are a medium, which he defines as a “means of transmitting information between a speaker or writer (the sender) and an audience (the receiver)” (McLuhan, 2003). However, the work done by Henderson, Taylor and Thomson (2002), and Ling (2007) suggests that while users are distinguishing

between CMC and real life interactions, mediums such as voice and video chat used by applications like Skype, are blurring the lines between face-to-face and CMC interactions, as these interactions are made up of both digital and real life practices. This demonstrates that the Internet and by proxy cell phones are blurring the line between digital and real life interactions, and that they have become an important element in the maintaining of student social networks. This shows that cell phones are resulting in the renegotiation of social practices as “major aspects of [young people’s] lives-social interactions, friendships, civic activities-are mediated by digital technologies. And they’ve never known any other way of life” (Palfery & Gasser, 2008:2). Erin Murphy (2008) echoes this when she states the arrival of digital technologies over the last thirty years has consolidated so that we now live in a ‘digital world.’ “Such a world is identified as involving a profound shift in how everyday life is experienced” (Murphy, 2008:2). Murphy’s interpretation is echoed by Richard Ling (2009), who argues that “cell phones contribute to social cohesion by facilitating microscopic ritualistic exchanges” (320). By engaging in the ritual event known as cell phone use participants are transformed from mere humans into hybrid entities that are both social and technological. The hybrid human that results from the participation in the ritual of mobile communication can be termed a techno-social being, known as a cell phone user (Case, 2008). As Tapscott notes, “for the first time in history, children are more comfortable, knowledgeable and literate than their parents about innovation central to society” (1998:1-2), due to the fact that ICTs allow users to interact and access virtual spaces by extending their identity and senses. Judy Wajcman (2006), reinforces this interpretation when she describes cell phones as one of the most influential agents in the dissemination

of information, becoming a liberating extension of our consciousness as individuals use mobile devices in various ways.

The Displacement and Construction of Liminality:

Similar to Wajcman (2006), Amber Case (2007) goes beyond Ling and Yttri's hypothesis that cell phones are simply changing users' behavior, and suggests that the "ritual of picking up the cell phone and transitioning to a conversation that exists on another time/space plane is a liminal one" (11). Liminality is a term coined by Victor Turner in 1967, which he defined as a state between states, a 'betwixt and between,' a beginning state and a final state (Turner 1967:97). Case (2008) expands on Turner's concept of liminality based on his observation of the rituals of the Ndembu tribe of central Africa. Here, he defines liminality as, "a ritual, especially a rite of passage, involve[ing] some change to the participants, especially their social status" (Turner, 1967:93).

Originally, Turner used the term liminality to talk about the transitional state that rituals represent. It involves stages transitioning out of, and back into, ordinary life: pre-liminal, liminal (during the ritual), and post-liminal (essentially, the reintegration into everyday life). Case goes on to suggest that an adolescent can be considered as existing in a liminal state, since the adolescent is in a in-between space as they are no longer fully a child and not yet an adult. The intersection between face-to-face interaction and cell phone conversations is a 'betwixt and between' social space, in which a caller is neither fully engaged with those who are physically co-present, but not fully mentally co-present (except for the technically mediated auditory connection) with the person on the other end of the line (Case, 2008:11).

While there are obvious differences between being a teenager and being on a phone or texting, both the transition to adulthood, or becoming a cell phone user and using it to have a conversation frees individuals from the constraints of the space/time and the expected behaviors and practices that are associated with adulthood, or face-to-face conversations as certain rules do not apply, and must be renegotiated.

Sadie Plant calls this form of connectivity 'bi-psyche', and points out that “in a way the mobile has created a new mode in which the human mind can operate... as the cell phone user is operating as though in two worlds in the psychological sense” (Plant, 2005:50). The difference between cell phone use and the traditional rituals Turner had in mind when using the concept is that the caller is not joining with others. Instead of going through a ritual transformation, like a puberty rite or wedding, which accomplishes a state of special connection Turner called ‘communitas’, the caller is both connected and detached; a solo situation, since the call-ee is not in the same physical space as the caller. The pre-liminal phase of the cell phone user is face-to-face interaction, and the liminal phase is the transformative period that makes the human into a techno-social hybrid [known as a cell phone users as they use their cell phone to access digital in-between spaces]. Additionally, “the transitional-being or ‘liminal persona’ is defined by a name and a set of symbols” (Turner 1967:95). The ‘cell phone user’ is the name of the transitional-being, and... the cell phone itself a liminal space because it is a space that exists as auditory signals in transit. It exists in between lived realities, and is a transitional communication medium (Case, 2008:11-13).

Case's (2008) extension of Turner's work shows how the ritual of cell phone use is displacing conversations as they take place and are creating 'betwixt and between' social spaces. This also provides one explanation for the formation of a digital native identity, as being technologically savvy in order to partake in these between space conversations is becoming a rite of passage for many young people in today's society.

This thesis utilizes the concept of liminality in two ways, extending upon how ICTs are transforming young people social practices, and how the impact of cell phones goes beyond their physical form (Ling, 2007). I aim to show how advancements within communication technologies create in-between spaces, which then displace and transform young peoples social practices. Second, I explain how owning and using a mobile device goes beyond its physical form, becoming part of young people's identity as it is seen as a rite of passage. While the influence of ICTs on society is broad, this thesis focuses on one of the most prominent ICTs being used by young people: the cell phone, or more specifically the smartphone.

Mobility, ICTs Today & The Evolution of Mobile Computers:

To understand how ICTs are contributing to North American society's shift toward digital natives, it is important to understand the evolution of both the computer and the cell phone. It is particularly important to understand the transition from the programing of a few specific operations into computers, and phones, to the complex devices young people are interacting with throughout their daily activities, which have numerous functions and allow users to interact in virtual 'betwixt and between' social spaces while on the go.

The first computer was a mechanical calculator created by Charles Babbage, an inventor and mathematician in 1821, in response to the tedious activity of having to correct mathematical navigation tables due to human error (Swade & Babbage, 2001). These mechanical computers eventually gave way to the first digital or electronic computers in the 1930s to 1940s, when John Vincent Atanasoff and Clifford Berry developed their first prototype: the Atanasoff Berry Computer (ABC), a technology quickly picked up by the American military that led to the creation of the Electronic Numerical Integrator and Computer (Burks, 2000). These computers ranged from prototypes that were the size of a desk to occupying entire rooms, and could be programmed through the use of punch cards. Due to the expensive nature of these machines, the regulation of computers originated in the hands of governments and large institutions, forming a power dynamic that was reinforced by the skilled experts needed to maintain and program these first computers. This meant that computers were mostly used in the aiding of national security and good governance, by governments, and were not accessible to the public. Two examples of this are Britain's Colossus computer, which was one of the most important tools during World War II in the effort to try to break German codes (Copeland, 2004); and the 1965 project Gemini computer that was used to by the Apollo space program to calculate the complex maneuvering required for a moon landing (Hall, 1996).

The next important shift was in the 1970s, when Steve Wozniak who is often credited with creating the first prebuilt personal computer, handmade the first Apple circuit boards in his garage. This led to the development of the Apple 1, the first personal computer, a term referring to the first computer an individual could own (Freiberger &

Swaine, 1999). While still expensive, the development of the personal computer opened the door for the general public, as individuals could own and have access to a computer within their offices and homes. Since the 1970s, personal computers have exploded: “in 2010 about 79 percent of Canadians had access to the Internet at home. Today, with the advent of Smartphones, many Canadians have access to the Internet in their hands” (Statistics Canada, 2010a).

The Landscape of the Landline

The advancements and miniaturization of computer components within the last thirty to forty years made possible a second notable shift—the movement from landlines to cell phones, and eventually smartphones. The introduction of the landline by Alexander Graham Bell in 1876, as an apparatus for transmitting vocal or other sounds telegraphically caused a radical social shift as humans could speak into a machine and have a conversation with another person on the other side. The first practical telephone derived from the creation of the electrical telegraph, and drastically changed the way the world communicated, allowing people to have verbal communications over long distances (Andrew, 1996). The first long-distance telephone line was installed in 1877, covering a distance of fifty-eight miles across Nevada County, California. Over time, as telecommunications improved, landline telephones became cheaper, easier to operate and more accessible. This led to the first transcontinental telephone line being installed between New York City and San Francisco in 1915 (Carolyn, 1990). The first transatlantic cable was installed between 1955 and 1956, carrying 36 telephone channels, making international calls possible. It ran from Gallanach Bay, Scotland to Clarenville, Newfoundland. The expansion of landlines continued during the twentieth century,

increasing accessibility and usage dramatically, making it possible for billions of people all over the world to remain in contact with each other. In a little over 90 years after the first long-distance telephone line was installed, landline service reached 100 million users worldwide (Daniels, 2012). The next major shift was in 1965, when the cordless phone was invented by a jazz singer called Teri Pall, who came up with the idea of eliminating the wiring to make the handset wire free (Emerson, 2007). While cordless telephones gave users the ability to move about their homes, the phone's range of movement seldom allowed the user to operate it outside of the house. The phone also had to be placed back in its charging receptacle or it would run out of power and would not ring. Those who needed a phone while 'on-the-go' or in the city had to find a phone booth, and required the telephone user to pay for 'borrowed' time (Case, 2008).

This all changed with the invention of the first car phone by Bell Labs in 1946, and Motorola's production of the first handheld phone in 1973 (Shi, 2007:55), which only held a charge for twenty minutes before having to be charged for ten hours and was about the size of a purse, making it large and unwieldy. Since then, the design of the cell phone has changed exponentially, blurring the line between cellphones and personal computers. In the 1990s, a decisive shift took place as highlighted by Leopoldina Fortunati (2006), when the second-generation digital mobile system using miniature circuit boards took over from the cell phone. The cell phone became smaller, more portable, more domestic (integrated into the home and daily life) and closer to the body. This was accompanied by the inclusion of new features, capabilities and communication architectures, as well as cultural expectations and routines, into pocket-sized technology; resulting in the cell phone becoming part of everyday life (Goggin, 2009:231). Fortunate

(2006) illustrates how the merging of personal computers and cell phones in the 1990s, has made it almost impossible to differentiate between them as computers have become smaller and cell phone have become more powerful. The distinction between computers and cell phones has become even murkier since 1990 with the integration of full Internet services into cell phones, which was first introduced in Japan in 1999 (Ishii, 2004).

The most recent evolution in mobile computer technology is the development of the smartphone, which is adapting the mobile phone to finally put it at the center of computing, the Internet and digital culture (Goggin, 2009:233). The reason smartphones are playing such a pivotal role in the shift in communicative practices is because they combines the convenience and mobility of a cell phone with the power, multiple functions (through the use of applications) and access to the Internet of a personal computer. This is an interpretation echoed by Case (2008), who infers that “today, computation devices are no longer held to the ground by cords but have become wireless and mobile. Telephones are no longer confined to roadside booths or the office of the domestic home. The cell phone is the wireless device that ties computing and telephony together.” Gerard Goggin (2009) emphasizes the difference between cell phones and landlines in his statement that, “The cellular phone was first and foremost an adaptation of the telephone. This process itself spanned the best part of the twentieth century, drawing together various complex revisions: the reworking of radio technologies and radio spectrum; the remediation of the telegraph; the reimagining of mobility; and the acoustical recrafting of voice telephony for the portable instrument” (Goggin, 2009:1). This meant that for the first time ever, users were no longer tethered to their computers or by their phone cord to an isolated location.

The second revolutionary thing about smartphones is that they are not only tying together computers and telephones, but they are incorporating other technologies into themselves through the use of applications. For example, smartphones are replacing older technologies such as alarm clocks, calculators, and mp3 players, incorporating the functions of these technologies into one device that has become smaller, more portable, and closer to the body. Simply put, mobile devices have become integrated into contemporary society because it is difficult to imagine all the artifacts we would need to replace our smartphones, as they are now a watch, a computer, a phone, a day planner, a flashlight and a navigation system, to list just a few of the functions now incorporated into many mobile devices. This occurrence is reinforced by “Time magazine naming the iPhone the invention of the year in 2007 (Goggin, 2009:236), as well as the iPhone having been “labelled as the first genuine handheld computers” (Grossman, 2007:237).

In addition to the massive technical advancements, the success of the cell phone is also due to massive social engineering. One example of how social engineering contributes to the success of a technology is the Blackberry, one of the first big mobile phone companies. One of Blackberry’s first marketing tactics was that it gave prominent government officials and CEOs free Blackberries, which became a symbol of their position. The first cell phones were mostly marketed towards businesses and their ability to solve the inherent limitations associated with fixed landline phones, giving users the ability to talk freely for the first time while walking or doing mobile tasks (Ling, 1999; Goggin, 2009). Since 1973 and the invention of the first cell phone, companies have diversified significantly by appealing to attract different audiences. This is suggested by Statistics Canada (2010b), in that “wireless cell phones continue to grow in popularity as

more than three-quarters (78%) of Canadian households indicated they had a cell phone in 2010, up from 74% in 2008.”

It is the mobility and displacement of physical proximity, or what Licoppe’s called the “connected presence” (Licoppe, 2004), made possible by cell phones that is transforming users’ social interaction and impression management. The cell phone allows for users to be always in touch, thus, instead of saving up thoughts and insights until it is possible to sit down and have a good chat with a friend, we can send them to one another immediately. In short, the threshold for interaction has been lowered. While Canada has always had a mobile culture in the sense that we have numerous transportation technologies such as automobiles, trains, buses and bicycles, historically users would be inaccessible when moving from place to place. It has only been in the last 25 years or so with the development of cell phones, that users for the first time ever have been able to be mobile and connected to each other, causing the renegotiation of “mobile culture” (Goggin, 2006). This highlights the growing importance of mobile technologies in contemporary societies (Urry, 2000), as cell phones have moved from being an expensive means of voice communication for business users to one of the most influential agents in the dissemination of information, as ordinary people can now afford to own one. They have also become a liberating extension of our consciousness, as individuals enact what a mobile device is to them, and use them in different ways. This allows users, like a doorway into a physical space, to gain access to virtual spaces and communities, and do things that were before out of reach or inaccessible.

Summary:

The objective of this chapter was to participate in the ongoing conversation around how the fixed social practices developed by previous generations are transformed by the advancements of communication technologies such as cell phones, allowing for the creation of new interactions and networks. Specifically, it explores how cell phones are techno-social hybrids; their physical form and their social use are inseparable, and they are becoming an extension of their users' identities, resulting in a new, unified entity: "a cell phone user." The freeing agency proffered by mobile devices is resulting in a new lifestyle—individuals no longer have to sit at home or be in close proximity to each other in order to communicate, and can choose which social ties and networks they wish to belong to.

Chapter Three: Findings:

This study starts with the assumption that humanity is now living in a digital age—an age of change created through the evolution of ICTs. The first claim this study makes is that communication technologies are affecting our societies, and have done so throughout history. While individuals may not notice on a daily basis the massive change that the invention of the cell phone and the Internet is bringing, change is taking place. This chapter examines three of the ways cell phones are affecting young people. First, it shows how young people within this study are more dependent than their parents upon cell phones and see their use as increasingly central to daily activities. Second, it demonstrates how users are interpreting and assigning different meanings to ubiquitous computing devices such as cell phones. Finally, it explores how cell phones have become integrated into students' lives through the use of social and technical engineering, mediating how they communicate, form and express their social identities, join collectives and gain access to social and economic opportunities.

Cell Phone to Mobile Device:

The first theme uncovered within this thesis was suggested by Neil, which summarized the sample's general response to asking what the term "cell phone" means to you. "Cell phone. If I had to define it, cell phone makes me think of something old school like a massive phone with a big antenna on it, but when people say something like a Smartphone, that to me means life, in the sense of it is everything I need" (Neil, 2013). Neil's quote illustrated two interesting themes, first that cell phones have evolved beyond basic voice communication, as the new smartphones have become mobile devices through the assimilation of other technologies into themselves such as the Internet, text

messaging, email, and an alarm clock to name just a few of the many functions a smartphone can now perform. Second, that ubiquitous computing devices are playing an increasingly central role within young people's lives. Neil's quote caused me to redefine cell phones as mobile devices for the purposes of this thesis, even though one of the eleven participants did not own a smartphone. The reason for redefining cellular phones as mobile devices is twofold: First because, the miniaturization of computers and the digitalization of the cell phone has made them almost indistinguishable. Second, due to applications, cell phones are no longer a phone as they can access the Internet and have multiple functions such as an alarm clock, day planner, or mp3 player, and are no longer just phones, as suggested earlier by Goggin (2009). The interpretation that cell phones are now mobile devices was further reinforced by this study's participants, who all defined the term "cell phone" in different ways. Simply put, a mobile device is no longer a singular object used for making phone calls, it is an "everything device," as users can now shape their phones in accordance with their personal daily requirements. This means that every phone is potentially unique, and personal, within a particular set of parameters (the physical limitations of a device), as users customize them to their specific needs. This customization means that it is very hard to define what a mobile device is. This thesis defines a mobile device as a multifunctional personal computer that enables users to engage in computer mediated interactions and communication. The central role that mobile devices play in the facilitation of these new computer mediated interactions in young peoples lives was best expressed by Anna, when she said, "as much as I don't like certain aspects about my [phone] I feel that my life and probably the lives of other people I know are largely mediated by technology based on how we interact with each other and

how basically we interact with the social world is really media and I think that is part of the reason why I see it as a necessity” (Anna, 2013). In addition, Anna’s quote reinforces Castells’ claim that a “technological shift is taking place, changing the way we live by changing the way individuals socialize, communicate, travel, work and store information” (2000:9). This interpretation is shared by Neil (2013) who suggests that this shift has arguably made mobile devices an executive actor, (which refers to a central node within a network) within the lives of young people, in his statement that smartphones “have now become the key to life,” and that he feels “disconnected from the world” when he does not have his smartphone, or when its battery dies.

The findings of this study provide two possible explanations for why mobile devices have become so prevalent and successfully integrated into the lives of young people and contemporary society. The first is due to mobile devices’ “interpretive flexibility.” This term was first used within the sociology of scientific knowledge (SSK), before being developed by social construction of technology (SCOT) thinkers like Trevor Pinch and Wiebe Bijker. The term interpretive flexibility refers to an artifact, such as a smartphone, capacity to have different meanings and interpretations for various groups. For example, Rachel (2013) saw her phone as an “emergency device”, Peggy (2013) saw it as a “business device”, whereas Holly (2013) saw her phone as an extension of her identity or a social accessory: “if you have a phone you feel like you are cool, you got the stuff.” These are just some of the multiple meanings participants associated with owning a mobile device, and it is in no way a definitive list. There were also general, overarching themes among all eleven participants such as “accessibility”, “mobility” and “social networking.” These themes reinforce Prensky (2001a), Tapscott (1998) and Strauss and

Howe's (2000) claims of a digital generation as young people are using ICTs; while at the same time reinforcing how general the concept is, as all of the participants gave different reasons and interpretations for using a mobile device and what it meant to them. Even among the general themes such as social networking, users were using a variety of applications such as Twitter, Facebook, blogs⁵, Instagram⁶, Tumblr⁷, or text messaging to, name a few of the applications participants were using to access social media and network. Not only are the ways participants are using mobile devices different, but Holly (2013) shows how the meanings users are associating with these devices goes beyond what they are using them for, to what they represents:

Apple means you have money, taste and are up to date with everything. Android, I do not know, I think they are only the name. The cheapest type of companies to get is usually Wind. If you go online and you have to sign up for something Wind is never one of your choices. It is usually Apple, Samsung, Android and something else, never Wind (Holly, 2013).

Holly's quote not only shows how mobile devices are becoming an extension of their users' identity, but reinforces Pearce and Rice (2013) claim that even among users of the same social group, with access to ICTs, there can be digital inequality.

The second reason mobile devices have been so successfully integrated into young people's lives is due to its designer's ability to adjust in response to the interpretive flexibility of relevant social groups, as an artifact is described through the eyes of different social groups. The term design flexibility refers to the concept that, just as a technology can have multiple interpretations, an object can also be reconstructed in

⁵ A blog is defined as a personal website or web page on which an individual records opinions, links to other sites, respond to comments and so on, usually on a regular basis.

⁶ Instagram is an application which allows users to share pictures and edit them through the use of filters, captions and hashtags*. *(Hashtags are similar to keywords used within academic articles to categorize conversation)

⁷ Tumblr is a blogging application.

multiple different ways by designers (or relevant social groups) in response to their users' particular needs. This means that the design of a bicycle, or a cell phone, is only one way of using a technology, which reflects the needs and interpretation of its particular social group, out of a wide range of possibilities. Bijker (2010) uses the example of a bicycle to show how "the description of an artifact through the eyes of different relevant social groups produces different descriptions—and thus different artifacts" (Bijker, 2010:68). For example, Bijker suggests that a "bicycle is a technical system comprising artifacts such as wheels, saddle, frame, handlebar and brakes" (Ibid, 4), which can be reassembled to meet the responses and needs of relevant social groups. Bijker gives the example of young men who saw the bicycle as an expression of their nerve or a way to impress lady-friends, eventually resulting in the mountain bike (Rosen, 1993).

Similarly, the findings of this thesis show that the success of mobile devices, and their integration into young people's lives as well as contemporary society, is due to their ability to respond to the needs of relevant social groups. The design flexibility of mobile devices was clearly demonstrated by all the participants' responses when they described their reasons for using a mobile device on a daily basis. All eleven participants stated (even those without smartphones) that they used their mobile device to network. As suggested by Gwen (2013), "I cannot imagine not having a phone and having like a good social life." There was, however, variation among how participants used these devices to network, and the networks they were accessing varied as well. For example, after a networking device, there was a three-way tie as six participants each stated that they used their mobile device for business/work, entertainment or as a safety/emergency device. This shows how the design flexibility of mobile devices has allowed them to appeal to

business owners like Peggy (2013), who says, “the reason I started using my cell phone is because now using smartphone technology I can access the documents that I need to run my business through my phone.” And employees like Leah, who discusses how mobile device are also being utilized by employees, as “a lot of workplaces now need a number they can reach you at all times or an email. For example, I have a friend whose schedule gets emailed to her so if she did not have a phone she would not know when she was working” (Leah, 2013). This shows how the successful integration of mobile devices is due to their designer’s ability to appeal and respond to the demands of relevant social groups. In addition, Leah’s quote shows that businesses are downloading costs onto their employees as businesses are leveraging the expectation that people will have phones to force them to buy them. This reinforces Bijker’s (2010) hypothesis that artifacts such as mobile devices are in fact technical systems which can be reassembled through the adding or removing of components, allowing mobile devices to become integrated into everyday business practices.

The three-way tie by six participants between the themes business/work, entertainment and safety/emergency device, shows how integrated into young people’s lives mobile devices have become. This has transformed not only business practices, but also leisure activities and how users are entertaining themselves. As suggested by Neil (2013), “In the morning I have a couple games I will check on my phone to kind of get my brain going and then I will drag myself out of bed. If I have a laidback day I will probably be on it most of the day just texting, looking at instagram or playing games.” This shows how young people are using mobile devices to alleviate boredom, which is a theme reinforced by Holly, who states that she uses her phone “when she is bored in

class” (Holly, 2013). The diverse ways mobile devices can be constructed, as a form of entertainment to address the specific entertainment wants of its users, is exemplified by Komi, who infers that, “During an average day, I wake up, I check my messages, I pack my bag, I look at my phone, I play games on my phone, check instagram, Facebook, if I watch TV I will play games on Facebook. When on the bus I text people and listen to music” (Komi, 2013). Komi’s quote illustrates the numerous ways that mobile devices are entertaining her, once again showing how the success of mobile devices is a result of its ability through the use of applications to be flexibly and appeal to a diverse range of users and social groups.

Finally, the third theme users emphasized was that they saw their mobile device as a safety or emergency device. Although this makes sense, it is not usually expressed within cell phone marketing advertisements. This theme was expressed by six of the participants, all women, who stated that owning a phone made them feel safer when travelling alone and in case of emergency situations, such as their car breaking down. One example of this is a quote by Leah who said, “I am not even popular, I don’t get text messages a lot, but I feel like I need my phone just as a security thing when I walk to work early in the mornings I like to have my phone on me because it is dark when I am walking on a path” (Leah, 2013). Even Rachel (2013) who did not own a smartphone, or like owning a cell phone, was not willing to give it up: “I wouldn’t mind just reducing my plan, but I would not give it up just in case of emergencies.” These examples show how technologies such as mobile devices not only reshape users as they adjust their behavior in response to what new technologies allow them to do, but also how technologies are reshaped in response to their users, as they find different reasons and ways of using an

object that might not have been predicted by its designer. For example, a continuation of the safety theme was suggested by the innovation of Leah's parents. "I got my first phone when I was thirteen for my birthday and that was more of a safety thing for my mom since I was starting to go out and hang out with friends more so she wanted to know where I was and what I was doing" (Leah, 2013). While the safety theme suggests different reasons for using mobile devices in accordance to the users' gender, this sample does not have enough male participants to begin unpacking how each gender is using mobile devices.

The diverse reasons users gave for using mobile devices reinforces this thesis' claim that the integration of mobile devices is due to their design and interpretive flexibility. This flexibility provides one explanation for the rapid integration of mobile devices into Canadian society, as they as they help facilitate and mediate users' movement through the world. And the utility of mobile devices allows them to appeal to a lot of users from different professions, backgrounds and social classes as they can be customized to match its user's specific daily needs. This has resulted in mobile devices becoming normalized within contemporary society as they are becoming increasingly and undeniably central to the way young people are communicating, forming and expressing their social identity and forming collectives. This interpretation is supported by Clare, who illustrates how mobile devices are mediating users' social interactions, in saying that, "if I need anything, you can always get it on an iPhone. So, if I do not have my iPhone, for example, I cannot call, I cannot text, I cannot interact with people. I cannot get information, I cannot look up my emails, I cannot do anything" (Clare, 2013). Clare's quote summarizes the sample's general attitude and justifications for owning a mobile

device, and for why they feel that mobile devices have become an important tool for accessing social and economic opportunities, as well as navigating the world today. This sentiment is shared by Holly, who illustrates how the integration of mobile devices into users' daily life may provide more social opportunities: "I think it is impossible to be successful without a cell phone, especially in the city. Because in the city you have to keep track of everyone, you need a job, you need a lot of things and a lot of things need a lot of people and connecting with a lot of people is the only thing that is going to get you through life" (Holly, 2013).

Chapter Four: Findings Two

In Chapter Three, it was established that mobile devices are becoming integrated into young people's lives. Next, it is important to examine how young people's use of mobile devices and the meanings they associate with them have contributed to the creation and stabilization of different social practices, while users negotiate with each other regarding the kind of cell phone use that is most appropriate. This chapter begins by dismissing the myth that long-established normalized cultural practices are universal, or grounded in a set of natural objective laws. It does so through showing how specific social groups, through their use of mobile devices, are contributing to the creation, sharing and stabilization of the different behavioral practices and meanings users are associating with their mobile devices. Finally, this chapter argues that the emergence of CMC technologies are forcing users to negotiate with face-to-face communicative practices, highlighting some of the benefits and consequences users expressed regarding computer mediated interactions.

The Myth of Universal Practices:

This thesis defines cultural practices as created practices, often specific to a certain group, made up of shared set of behaviors, meanings, relationships, norms, exchanges and rituals that make up society. For example, a cultural practice could be an ideal or set of behaviors and norms that are associated to an activity, such as when attending a fancy dinner party, polite table manners might dictate that you use the correct utensil at the appropriate time, not put your elbows on the table, or not show up in dirty clothes. In fact, whether we recognize them or not, cultural practices range from micro practices

specific to groups such as what clothes are appropriate while at work. While some individuals might be expected to wear a suit everyday, if you worked on a construction site it would be considered inappropriate to wear a suit. Cultural practices can also include macro practices, such as in Canada it is generally considered inappropriate for people to walk down the street and kick children, as there are consequences for kicking children. These ideals and practices such as not kicking children, dressing up for an interview and so on, act as scripts, following a set of culturally created rules and expectations that influence how individuals are expected to behave, resulting in the creation of an overarching meaning or identity such as a student or a parent. To paraphrase Roland Barthes (1957), cultural practices are hidden sets of rules and conventions through which meaning, which are in reality specific to certain groups, are made to seem universal.

This interpretation is reinforced by the findings of this study as all eleven participants responded to the question, “are there any social expectations or rules users have to follow when using a cell phone to communicate”, by stating they did not know, or by expressing how the rules and expectations they follow vary from user-to-user. Examples of this negotiation between users was expressed by Gwen (2013) when she talked about texting: “I do not think it is really weird if people text me really late, but I have some friends that get mad if you wake them up.” Abby and Rachel, as Abby (2013) liked “ how texting was less emotional so she could say what was on her mind”, whereas Rachel (2013) “hate[d] the way [she] could not see user’s emotions or body language.” There were also differences between Rachel and Holly’s use of mobile devices—while Rachel preferred talking in person and calling over texting, as she was “not a person that

has conversations over text messages, so if they want to say something and talk to me about it they have to come talk to me or call me,” Holly did “not like calling, I like texting.” These examples show that, while young people born after the 1990s are all using ICTs, how they are using them varies from user-to-user, forcing individuals to negotiate what is appropriate on a user-by-user basis. Holly reinforces this interpretation and Barthes’ (1957) claim that cultural practices are in reality specific to certain groups, when she talked about texting with her friends. Sometimes “my friend text me words and I have to ask them to explain what they mean. Because there are a bunch of words like plp⁸, lol⁹, gth and some people make them up right there. If they are closer to you I feel like some words will work, but sometimes they don’t” (Holly, 2013). Holly’s example of user specific and created terminology exemplifies this thesis’ position that communicative practices are created by groups, and are often specific to groups. For example, Holly’s quote also shows how cultural practices can spread over time and become normalized, exposing how long-established communicative practices such as language, are created practices that do not obey a natural objective sets of rules. For example, words and their meanings become taken for granted. Words like lol, which Holly thought were universal, “words like lol are universal, well most people or students here at Carleton know them, but there are words that me and my friends make up like GTH go to hell or go to heaven meaning the opposite way as in go die.” (Holly, 2013). While these quotes reinforce Prensky’s (2001a) claim that young people are using short forms to communicate, Peggy (2013) shows how her mobile device use changes depending on the person or group as “with friends [she] will use short forms, but when

⁸ I did not know what plp meant, and when I asked Holly she did not know what plp meant either. It was just one of the terms her friends used.

⁹ Lol stands for laugh out loud.

[she is] with [her] bosses and professional colleges [she is] very professional, and writes the full word.” Peggy’s quote shows that young people use of mobile devices changes depending on the expectations of the social group they are trying to access, and what the group defines as appropriate. Holly, Peggy and Rachel’s quotes suggest that Goggin (2006) hypothesis of a mobile culture is wrong, as while there are shared practices and digital natives might be distinguishable by their use of ICTs, these practices are more local and specific than he thinks.

Instead, users are creating and associating a wide range of uses and meanings to their mobile device, which go beyond its multiple functions and physical form. One example of these conveyed meanings, which may not need to be verbally communicated, was the concept of mobile devices as being “cool” or “modern.” “The brand matters, modern right now are phones that have big screens and touch typing... If you have an Apple laptop, or Iphone, or an HP laptop or phone whatever you walk you feel like you are actually cool and every time you take out your cell phone and are checking it everybody is watching you and they can see that you have a phone too” (Holly 2013). She also goes on to show how users form symbiotic relationships with their phone, using them as extensions of their identity when she talked about what owning certain phones connotes,

Apple means you have money, it means you have taste and you are up to date with everything. People that have BlackBerry tend to be very strict or very just people who just seem to be very formal, or people that have businesses. Wind is the cheapest and it is annoying when the network goes away. Also when I see someone with a phone that opens I feel like they do not have enough money to go and actually buy a phone. It is rude but that is how it feels if you do not have a Blackberry or a phone that has a touchscreen it seems like you do not have the money to buy one (Holly, 2013).

Holly's quote illustrates how the impact of mobile devices goes beyond its functions and physical form, and has become platforms for social expression, showing how users' identities are merging with technology and validating Ling and Yttri's (1999) theory of hyper-coordination. Clare (2013) provides an explanation for the many different ways users are using mobile devices and assigning them meanings: "I do not know if there are any rules around using a cell phone, I just use what works." Clare's quote suggests that while young people are being defined by their use of mobile devices, there are no established cultural practices around where, when and how it is appropriate to use them. This means that young people are negotiating with each other what is appropriate, resulting in different groups of users that are all just following the set of behaviors and practices that have worked for them in the past.

How are Scripts Learned and Spread?

The data suggests that users learn proper mobile device etiquette in a number of different ways. The first way users are learning how to use mobile devices was expressed by Leah (2013): "before I had a smartphone I learned by reading the manual for my first phone, and I learned from that phone the basics of how to do everything." This shows how some users learn how to use their mobile devices through technical scripts such as manuals, which designers wrote to teach users basic skills such as how to charge it, make a phone call, text message, or setup their email account. In addition, Leah's quote shows how the basic technical skills users learn from basic devices such as how to use a basic cell phone such as dialing a number, knowing which end of the phone to talk into; the proper way to use a camera such as how to take a picture, when you use a flash; or how to use the Internet for checking email, and surfing the net and so on become combined over time

into complex devices such as a smartphone. The interpretation for how simply scripts accumulate into more advanced technical objects as suggested by Neil when he talked about how he learned to use his smartphone. “The first phone I had was a really basic flip phone pretty much all there was text messaging and calling it was a very simple phone. I only got a camera when I upgrading. When I upgraded from a flip phone to my smartphone it was a huge change there was so many things to learn” (Neil, 2013). Neil’s example shows how new objects introduce new functions, but build upon the old technical skill users are expected to know from pervious models, such as texting and calling, or the technical skills users would have learned from owning a camera before it was incorporated into cell phones.

In addition, the data shows that users learn how to use their mobile devices through peer-to-peer teaching from their parents, siblings and friends. Leah and Clare’s excerpts illustrate the role users play in the teaching others how to use their mobile devices and the stabilization of behavior practices. “When I got a Smartphone my brother had to show me everything because it was a whole different ballgame. So I was helpless I did not know what to do” (Leah, 2013). While the gender sample was not large enough to measure the technological experience of each gender, Clare’s quote suggests that both genders are using mobile devices equally, resulting in the creation of both male and female experts. “My sister is really good with technology for some reasons. She was always more of a social butterfly than she was studious so for her to know all these things was expected of her and if I ever needed to know something about my phone I would just go and get her to teach me how to do it before I usually bothered trying” (Clare, 2013). This interpretation is shared by Shelia Cotton (2009), who found that “while boys are

more gadget obsessed, boys and girls spend about the same amount of time using their cell phones for chat and text.” Finally, Clare’s quote shows how scripts spread, as users become the advocates for new technologies and teach each other how to use them in different ways.

Another component that was interwoven into the theme of peer-to-peer teaching and the creation of technology expectations, was the concept of trial and error, or play. As users experimented and played with new technologies in order to figure out what works, and what does not work as suggested previously by Clare. The concept of trial and error through play was most clearly expressed by Neil, who states, “as soon as you get a Smartphone you are probably not going to put it down for a good month. You are going to be figuring it out like how do I email somebody, or how do I get this app, or how do I check my emails and send and receive an email and how do I get it so it will notify me, it is all figuring it out” (Neil, 2013). Neil’s quote illustrates how users are experimenting with their mobile devices in order to figure out what they can do, but also links back to Clare’s earlier quote, in which she suggested that the reason there is no one distinct mobile culture is because users are experimenting to see what is socially acceptable as well. One of the side affects of users experimenting with their mobile devices is the discovery of unforeseen uses. This theme was best expressed by Leah (2013): “I still use my phone for other things, but it is a big source of entertainment to be able to sit on a bus and be able to scroll through my tumblr page as I am not wanting to look at people.” Leah’s use of her mobile device shows how, while mobile devices were originally developed to allow users to be accessible while on the go, one of its unforeseen uses is that it can also be used to create privacy, or isolation in physical situations.

The final factor users gave for learning how to use mobile devices was economic and social pressure, as in order to access different social group or gain employment users felt obligated to own and learn how to use a mobile device. The social pressure users experienced was expressed in a number of ways. The first way was highlighted by Komi: “I guess owning a phone did help me fit in just because I had that connection to my friends in not just owning a device but also being able to connect with them more personally on that level that I had not before” (Komi, 2013). Komi’s response to how owning a mobile device helped her acquire the necessary behavior and props needed to be connected and accepted among her peers, shows how the use of these devices are transforming the way young people communicate and access collectives.

The social pressure to own a mobile device was also expressed by Dawn who states, “those who have cell phones and those who don’t are treated different. If you do not have a phone you are seen as someone different, you are seen as abnormal, especially in this age it is common to know everything about technology and have all the newest gadgets” (Dawn, 2013). Komi and Dawn’s responses demonstrate how users are adopting new technologies and adjusting their behavior in response to their environment and societal pressure, as not following the societal norm of owning a mobile device has consequences such as a loss of social status and isolation. One example of how central mobile devices have become in contemporary society is suggested by Neil, who talks about the potential socioeconomic consequences of not following the social norm, “I don’t think anyone in this day and age can get along without a phone. Unless you are in agriculture like a farmer or something like that which does not have a customer base. Anything with a customer base or a politician where they have people that are behind them, needs contact

with those people you need to keep constant updates of whatever” (Neil, 2013). Neil’s excerpt shows how integrated mobile devices have become into our society, to the point that young people are seeing them as an essential tool for accessing social and economic opportunities. Holly reinforces this theme by stressing how networking using mobile devices is becoming an important factor in users social and economic success. “I think it is impossible to be successful without a cell phone, especially in the city because of the amount of people. In the city you have to keep track of everyone, you need it to find a job, you need a lot of things and a lot of things means connecting with a lot of people” (Holly, 2013). Finally, Anna’s quote shows how mobile devices have become integrated within the labor market and become important tools in accessing economic opportunities.

I feel like in terms of employment the availability of classifieds and ads and how everything in terms of looking for work, applying for jobs is done online and there are a lot of places that actually do not process paper any more. So I feel in that sense you would benefit from having access to a mobile device simply because you are going to have a wider sort of variety of information available to you in terms of employment and job opportunities (Anna, 2013).

Anna’s quote shows how the integration of new technologies such as mobile devices transforms normalized cultural practices, as not only are users expected to have an online presence, but businesses practices such as the hiring of new employees have to adapt to the fact that more users having in online presence by shifting from physical resumes to online applications.

It has now been established that users are learning sociotechnical scripts such as how to use a mobile device, where it is appropriate to use it, and the specific terminology used within different groups, through technical manuals, the creation of user experts and trial in error. It is now possible to analyze the state of normlessness brought about as

long-established practices associated with physical interactions, are displaced by CMC interactions as society goes about establishing proper cell phone etiquette. This thesis argues that Canadian student society is undergoing a period of anomie as long-established practices are evolving in response to the new possibilities of CMC, an interpretation reinforced by the work of Durkheim (1933). The term anomie refers to a period of normlessness brought about by rapid change, as the expectations around how people will behave are called into question, or do not apply. The term norm refers to a rule that is socially rather than formally enforced. The multiple ways users are adopting and learning societal scripts outlined within this chapter reinforcing this thesis stance that a new way of studying technology is needed. To paraphrase Wiebe E. Bijker (2010), technical reductionism and technical determinism — that presumes a society's technology is the key mover in the development of its social structure and cultural values, or social reductionism and social determinism— that presumes society's develop their interactions and values independent of technology, are both impossible as explanatory strategies, as both these approaches fail to recognize the influence of society or technology. Instead, new forms of explanation need to be developed that take into account how technology and societies co-evolve and are co-produced (71).

Summary:

The objective of this chapter was to dismiss the myth of universal practices, and instead show that users' communicative practices are made up of social and technical elements, that are specific to relevant social groups, which if followed or combined in the expected ways, convey meaning. This chapter has also illustrated that the impact of mobile devices is taking place on both a technical level, as CMC is evolving and reshaping society, and a

social level, as society creates and reshapes new and existing technologies. To paraphrase Bijker (2010), mobile devices are like a coin; it is a physical representation or object that is given meaning and value by a group of people. In addition, like a coin where it is impossible to determine where one side ends and the other begins, the physical form of a technology like a mobile device cannot be separated from the social forces that gives it meaning.

Chapter Five: Findings Three

CMC Verses Face-to-Face the Shift from Conversations to Connections:

While the integration of mobile devices has numerous impacts, as illustrated in the previous chapters, users are finding innovative ways to use these technologies and are assigning them different meanings. This chapter focuses on the shift in young people's communicative practices. More specifically, it investigates how the shift from face-to-face to digitally mediated interactions transforms established communicative practices, forcing users to constantly negotiate with each other what kind of mobile device use is appropriate. This chapter begins by outlining some of the central elements found within face-to-face interactions, before analyzing how mobile devices allow users to move beyond the physical limitations of face-to-face interactions. Finally, this chapter will demonstrate how the removal of physicality and the ease with which users can now digitally interact is transforming intimate relationships. This is illustrated by a shift away from long deep conversations as users would save up information until they met up in person, towards connections where users exchange short messages and pictures.

Breaking Down Face-to-Face Communication:

While mobile devices are causing numerous changes in society, this thesis focuses specifically on how CMC, facilitated by mobile devices, is transforming face-to-face communicative practices. In order to do this, it is important to first unpack the social expectations and unspoken rules used within face-to-face interactions. Paul Grice's (1991) theory of cooperation serves as a foundation by outlining how effective communication within common social situations such as conversations traditionally followed a set of rules. Grice broke these rules down into four maxims: quantity, quality,

relation and manner (Grice, 1991:26). The maxim of quantity dictates that the information provided needs to be neither more nor less than is required. Grice uses the example of repairing a car to illustrate this, by suggesting that if you were to assist him in mending it and he was to ask you for four screws, he would expect you to hand him four screws, not two or six. The maxim of quality dictates that the speaker's contribution is expected to be honest and genuine. This maxim includes things like not saying untrue statements or statements that are not supported by enough evidence and therefore could be false. Grice emphasizes his point by drawing on the example of baking a cake. He suggests that if he were to ask you for a cup of sugar, he would expect to be given sugar, not salt. If you were to give him salt you would be breaking the maxim of quality by contributing a false component and therefore ruining the cake or conversation. The maxim of relation is where the contribution has to be relevant and pertinent to the conversation. Again drawing on the cake example, if Grice was looking for something to mix the cake with, he would expect to be given a stirring implement, not a good book or an oven mitt (although this might be an appropriate contribution at a later stage). Finally, the maxim of manner dictates that conversationalists should remain clear, brief and orderly in what they say, avoiding obscurity and ambiguity.

While Grice wrote his maxims in 1991 and focused on how these rules applied to face-to-face communicative practices, the participants within this study illustrated how CMC interactions are still built upon Grice's maxims. One example is Holly's excerpt, which shows how Grice's maxims of quantity and manner are still important within CMC:

These days if you have a phone you need to be able to text and when you are texting there are rules like you cannot literally put the whole

paragraph in it because the phone will actually tell you when you put a big paragraph that there is no space and it will turn it into an email. Perhaps not everyone's phone mine it is like that, but I literally have to crunch it into a few words" (Holly, 2013).

Holly's quote reinforces the idea that was suggested earlier by Durkheim, and Toffler (1980) who states that new commutative practices are built upon the practices that came before them. Toffler's hypothesis is reinforced further by Leah, who highlights how CMC still follow the maxim of relation: "I think you have to be really clear what you are trying to say and how you are trying to say it on a smartphone a bit more than when you are in person because they can see if you are being sarcastic or not and on a phone you just have the words to go by" (Leah, 2013). In addition, Leah's quote shows how, in digital interactions, some rules can become more important, since the receiver cannot hear your tone and misses out on physical cues such as body language and emotion. Gwen reinforces this interpretation when she talks about how digital interactions and CMC not only follow Grice's rules, but can also enhance them:

If I have to say something serious, or I am mad at somebody since they did this hateful thing or really hurt my feelings. I will usually send them a text since it is easier cause I can write it all out, organize it and go back and edit it, whereas if I am saying it I cannot take back what I said and put in other words. So I will usually text since it is easier for me to see if I am making sense instead of babbling on face-to-face (Gwen, 2013).

Gwen's quote shows how CMC not only follows Grice's maxim of manner, but that its limitations can enhance these rules, as users are forced in order to maintain clarity to compose brief, clear and orderly messages. In addition, her quote shows how this study's participants are adjusting their behavior in response to the introduction of new technologies.

However, Leah suggests the shift from face-to-face interactions to digital interactions is not without friction.

If I am going to trust someone online especially if it's someone that I might meet or give my address so they can send mail or send money through the Internet I will definitely make sure that I have seen their face in real time so like Skype calls. Because a lot of times people get as they call it catfished¹⁰, where someone online is not who they say they are and honestly if you have seen that documentary you know that this person did not Skype the person. He had phone calls with her but it was a woman disguising her voice. Whereas face-to-face you can see who you are talking to, but online I think you have to be a little bit careful and take precautions about who you are talking to and make sure they are who they say they are and Skype is definitely a way in my opinion or any video call to at least make sure they look and sound like the person they say they are even if they have a different name or something you can at least see that they are right there in real time who they say they are (Leah, 2013).

Leah's quote suggests that while CMC still follows Grice's maxim of quality, the traditional ways of measuring whether users were being genuine and honest are based on physicality, which do not apply to many digital interactions, as you cannot see who you are talking to. This is a problem that Leah resolves through the use of video mediums such as Skype, which bridges the gap between face-to-face and digital interactions as users can physical verify if each other were being genuine and honest about their identity and see each other's body language. While Grice's maxims are in no way a finite list of the rules associated with physical face-to-face conversations, they serve as a useful lens through which to examine the shift from physical to digital interactions. This thesis's interpretation of Grice's maxims in relation to CMC context highlights the tension users experience as they negotiate when it is appropriate to use their mobile devices in person, and what face-to-face rules carry over into digital interactions.

¹⁰ The term catfished refers to when someone online is not who they say they are. The term comes from the 2010 American documentary *Catfish* directed by Henry Joost and Ariel Schulman.

The Tension Between Face-to-Face and Computer Mediated Conversations:

The tension between physical and digital interactions was best expressed by Rachel (2013), who notes, “I don’t like the idea of being able to talk to people without being face-to-face because you are not really getting the whole idea of what they are saying without seeing their facial expressions and it is awkward if you meet up because you don’t know if the argument is over” (Rachel, 2013). Rachel’s quote expresses how the between spaces made possible by mobile devices blur the lines between online and real life, and cause confusion as users are neither fully engaged with those who are physically co-present, or fully mentally co-present with the person on the other end of the line. The conversations are mediated by a mobile device and exist within a sort of in-between space. Therein is found the problem, as raised by this study’s participants, CMC is blurring the lines between online and real life interactions as users must negotiate with each other what sort of behaviors are now appropriate within various settings and groups.

The biggest difference users expressed between face-to-face and CMC was the lack of nonverbal factors, as face-to-face communication is interwoven with other nonverbal factors. One example of this is the proper response time in digital interactions—in these interactions, users are not forced to respond right away. This can cause tension, as users must negotiate with each other what is a timely response time. Some users like Holly and Leah suggest that it is rude to not respond right: “my friends get mad if I do not reply right away” (Holly, 2013), “I continuously check it in twenty minute intervals, in case I missed something, even though it is impolite” (Clare, 2013). Whereas other users like Rachel (2013) will “toss their phone in their bag and forget

about it for days.” This problem is made even murkier by Holly (2013), who suggests that “it is very easy to ignore someone with a cell phone rather than face-to-face.” Of course, this is something she could not do if she was face-to-face with someone. These quotes show how CMC is transforming young people’s communicative practices, as users are always reachable on their mobile devices, but now must negotiate with each other what is an appropriate response time, as opposed to face-to-face interactions where users are obligated to respond immediately.

Neil (2013) highlights another nonverbal element of face-to-face interactions when he speaks of “personable” interactions, or the sense of emotional and physical connection users feel toward one another.

Texting is definitely less intrusive and it is not as personable in a way. It is very disconnected in a way for me as I can ask somebody more intrusive questions and more difficult questions than I would on the phone or in person, or tell them something. I don’t feel as connected to somebody when I am texting, as I can just say whatever is on my mind rather than being timid and kind. Whereas in person or on the phone I do not want to bring up certain things because I am hearing their voice now and it is more of an intimate conversation than a text message. I feel a text message is more disconnected and more electronic so you can just kind of say whatever and they can take it in any way that they want to. I feel in that way texting gives me a little more freedom to say what is on my mind. Rather than if I am talking to someone on the phone you kind of have to dance around a subject that is kind of touchy you know (Neil, 2013).

Neil’s concept of less “personable” suggests that mobile devices are serving as a “safety link” (Fortunati, 2001) between users, as the in-between spaces created by mobile devices are displacing their users’ physical emotions and body, protecting them as they exchange information. In addition, while he talks about how CMC allows users to be more direct and feel freer to say what is on their mind, Neil’s quote suggests that some types of CMC such as talking on the telephone, which replicates some of the aspects of face-to-face

interactions are more intimate and potentially uncomfortable as users can see and hear each other.

When asked about the differences between face-to-face interactions and computer-mediated interactions, all of the participants' responses were similar to Neil's, as they felt that face-to-face interactions were more intimate; as though they felt more of a connection. Clare suggests why users feel that face-to-face interactions are more intimate than CMC when she talks about their differences:

The difference between real life and texting is I cannot see their reactions. If I am texting I cannot see them get offended or get upset so I do not get the worry like you do in person because you have something in between you. I do not know you are kind of missing some kind of connection that causes that emotional barrier when you are in person with them. Body language is also important because I know the body language is like over 90% of communication between people and you miss that so I guess that is part of the disconnect (Clare, 2013).

While users like Clare and Neil mostly saw the benefits of CMC, these new forms of communication also come at a price as suggested by Rachel in her interview, "I don't like the idea of being able to talk to people without being face-to-face just cause you are not really getting the whole idea of what they are saying without seeing their facial expressions I guess and things like that" (Rachel, 2013). Neil, Clare and Rachel's quotes show how the in-between spaces made possible by CMC result in a shift, as they displace established elements used to evaluate face-to-face conversations such as body language, physical proximity and empathy that is taken into account in face-to-face interactions.

The final tension between face-to-face and computer mediated conversations exposed by the findings was the concept of engagement. Dawn (2013) summarizes the sample's general perspective around the different levels of engagement found within face-to-face and digital interactions in the following quote: "when you are talking to

someone face-to-face you have to respond immediately, and you can talk for as long as you like and you will have their interest. Whereas I noticed texting people that they tend to lose interest if you send them a long text or email. So I notice a difference between the two.” Dawn’s quote reinforces Case’s (2008) hypothesis that while users are more connected to each other than ever before, they are not fully engaging with the people on the other end of the line, or the people around them. Anna reinforces this interpretation when she talks about how mediums like the telephone and Skype incorporate aspects of face-to-face and computer mediated interactions. “Talking on the phone is more intimate and intimidating since it like face-to-face interactions forces people to respond immediately and is more personal since you can hear and have to deal with peoples emotions” (Anna, 2013). This shows how mobile devices are bridging the gap between computer mediated conversations and face-to-face conversations by incorporating different mediums like video, which reproduces some of the aspects of face-to-face interactions, like as sight and sound. In addition, Anna’s quote and the other differences such as specific terminology, and the reduction or loss of body language and trust expressed by participants within this chapter so far, demonstrate why it is important to question not only what a new technology does and how it is being used, but also what it does not do, and what is replaced or lost as users adopt these new technologies.

CMC and the Negotiation of Long Established Practices:

The data gathered within this thesis suggests that a negotiation has taken place between CMC and face-to-face interactions, as the emerging technology and its accompanying ideologies begin to challenge the cultural dominance of long-established practices. Gwen exemplifies how CMC are changing long-established social practices when she talks

about how she meets up with her friends. “I was actually thinking about this the other day, back in the day people to make plans would have to go over to your house and just knock on the door and hope you are home, but to do that now is just weird” (Gwen, 2013). Gwen’s quote expresses how the normal way young people use to meet up, by going over and knocking on a friends door, has changes in response to the development of mobile devices as young people now find it weird if their friends show up unannounced.

Another example of the tension between online and real life is the renegotiation of the term “friend.” Leah (2013) proposes that a major shift has taken place, as users now have online “digital friends who may care about you as a friend, but I would not trust their advice”, and offline “real life” friends who know you and the people around you in the real world. Dawn (2013) expands on this theme when she talks about Facebook, “Facebook has this thing where you have family, close friends, friends, acquaintances and all that.” This shows how not only are users differentiating between online and real life friends, but that there are different types of online friends. This interpretation is shared by Clare (2013), who suggests that there are even levels within there categories as CMC is creating a shift in intimate friendships towards superficial connections, when she states,

I do not unfriend people because if I ever need them for something I have them there. Another reason is that it is kind of interesting to see where the people in high school, especially the people I did not talk to in high school, are going and how they have changed. I like seeing what kind of opportunities they are getting and what you can expect to see at the reunion and stuff like that (Clare, 2013).

Not only does Clare’s quote show how a shift has taken place as users are now maintaining connections with people just in case they need them, it also reinforces the

interpretation that young people are buying and using mobile devices in order to maintain these connections and to access more social and economic opportunities. In addition, Clare's quote reinforces Leah's claim that CMC changed face-to-face interactions such as catching up with a friend, as users can now access personal information instantly.

Irwin Altman and Dalmas Taylor's (1987) metaphor of an onion provides one explanation for this shift in intimacy between friends. Picture a friendship as an onion. In face-to-face interactions, users have to start at the first layer, or orientation level, which involves the sharing of safe information, such as your name, where you are from and what you are studying. Eventually, as users spend more time together they might move to the second layer, or the exploratory level, where users start to reveal their opinions on politics, if they have any siblings or children, where you hope to go for your holidays, and other, more personal questions. Altman and Taylor call this stage the casual friendship stage. In this way, as users get to know each other better they progress through the layers. The next progression is the affection stage, where they now talk about private and personal matters. This is followed by the stable stage as the relationship reaches a plateau in which personal things are shared and each can predict the emotional reactions of the other person. Now, thanks to the Internet and by proxy mobile devices, users can bypass talking to people and the orientation stage of getting to know someone by going on Facebook. As users can now look up information on sites such as Facebook or Google, this allows them to fill in some of the offline experience of getting to know a person, as they do not even have to speak to each other in order to find out personal information, such as where their friends are working, what kind of people they are interested in and if they are single, if they have children, and so on. This interpretation is

suggested by Clare when she talks about how owning a mobile devices has changed the way she hangs out with her real life friends,

I guess because I talk so much online with my friends and cousins we do not feel there is a need to hangout because it would be kind of the same thing. So going out of our way to see each other is not necessary whereas if you did not talk to them all the time you would be dying to see each other and you would be hanging out all the time and be doing bonding stuff. You would go out to movies, swim, horseback ride stuff like that (Clare, 2013).

Clare's quote shows how young people now have the ability to exchange intimate information without actually having to meeting up in person, as CMC has transformed the ways in which Clare is communicating, forming and expressing her identity, as well as how she joins collectives.

The second major difference between CMCs and face-to-face communicative practices is the creation of a sense of uncertainty, as participants did not know if the rules and expectations associated with face-to-face interactions applied to digital interactions. This interpretation was most clearly emphasized by participants when they talked about dating. Some users, like Gwen, felt that the general rules of face-to-face interactions still apply to CMC:

I think face-to-face rules still apply to text messages. I would not just say something really random if we had just met and I thought you were cute I wouldn't be like oh my god I like you so much I want to date you and be your girlfriend. No, I wouldn't do that. He is going to think I am crazy I wouldn't do that face-to-face and I wouldn't do that on a cell phone (Gwen, 2013).

Still, other users talk about how CMC has allowed them to act in ways that they would not normally when face-to-face. For example, Peggy (2013) states, "I am a very nervous person, but on the phone I do not have any nerves I am calm, so I am more likely to stand up for myself as I am more confident over the phone when I cannot see their faces", or

Neil (2013) when he talks about dealing with confrontation “I am not as inclined to back down over texting because I am staring at my phone, you are not like staring at a person, so I do not have to care about their reactions or feelings.” These excerpts show how mobile devices are transforming communicative practices as users are shielded from the emotional and physical response their comments might incite. However, Gwen contradicts herself later on when she states, “there are times when I am too embarrassed to ask this guy out on a date so I will just text him so yeah. It just gives you a little more confidence” (Gwen, 2013). Not only does Gwen’s quote contradict her earlier statement about how she feels the rules associated with asking a guy out still apply, but it illustrated the tension users experience as they negotiate what established rules apply to computer mediated conversations.

The Shift From Conversations to Connections:

This study’s findings highlighted three major ways computer mediated conversations are different than face-to-face conversations. These differences are a “loss of engagement and intimacy” (Anna, 2013); “the loss of physical accountability” (Peggy, 2013); and “the expression of emotions and body language through emojis¹¹” (Leah, 2013).

Shift in Intimacy and Engagement:

The loss in intimacy within relationships was expressed by all eleven participants, but was best summarized by Anna (2013), when she speaks about how the normalization of mobile devices into everyday practices affects her real life relationships. “I have this thing where sometimes if I am spending time with another person I can find it very alienating when they are on their phone too much. I am kind of hard on my partner about

¹¹ Emojis are Japanese words/emotocons* that have a wider range of expressions.

*Emotocons refer to smiley faces such as ☺ ☹ that convey an emotion such as happy or sad.

it because I am like do you really need to be on your phone while we are eating dinner or while we are watching this movie for instance, can we just do one thing at a time” (Anna, 2013). Anna’s quote shows how mobile devices effect a wide range of social interactions from dinner table etiquette, to romantic relationships, but also how being socially connected to users around the world 24/7 can actually prevent users from engaging with people they are with in the real world. The lack of intimacy, or engagement caused by mobile device use was echoed by Gwen (2013), who states, “when I am out with friends it is all right if they text occasionally, but say we were out for coffee and they were texting the whole time it would be really annoying. I want to talk to them that is why we are hanging out, I do not want to watch them use their phone.” Dawn even goes so far as to describe this kind of interaction as “soulless.” These quotes demonstrate how young people are now having to constantly negotiate with each other what kind of mobile device use is appropriate, not only when they are using them to access in-between spaces, but their use of these devices within physical spaces as well when out with friends. As suggested earlier, while some users like Holly view mobile devices as an important component of hanging out with their friends, Dawn states that,

when you are hanging out with friends I think there is a limit to when and how much you can use your phone. Like if you get a text that is fine, but don’t be constantly texting when you are with them. Since it is like your physical body is with me, but your soul is not with me. So I think there is a limit to how many texts you can send with someone. Otherwise I find that rude, because it is like why hangout with me if you are like with someone else through phone (Dawn, 2013).

Anna and Dawn’s quotes suggest that the loss of intimacy is due to the displacement of physical proximity or connection. The conclusion that CMC is resulting in a loss of intimacy and engagement among users suggested by Clare (2013) when she said,

I find it interesting that we are more social now with mobile devices but it is less meaningful a lot of times. The connections are not as deep, you do not get to know people as well, you tend to see people less because you see people more on your phone so it is in a way making sure you are always connected to them but you are never around them (Clare, 2013).

Not only does Clare's quote show the central role mobile devices are playing in young people's lives, but she goes on to emphasize her argument using the example of a website called Tagged. "Tagged is not a dating site it is kind of like Facebook you have a profile and everything. On Tagged people can add other users they want to get to know and talk to. So it is like Facebook, but you add people you do not know on purpose, for the purpose of getting to know them. It is kind of like speed friending." Clare's quote suggests that users are now collecting friends based upon quantity rather than the quality of the friendship.

Loss of Physical Accountability:

Peggy expands on the differences between digital interactions and face-to-face when she talks about accountability. "I think the only issue with technology is people don't have professional online behavior, or have to be professional in text messages, like they would be in real life. That is where I see the problem of online and texting. People have all this access and they can say whatever they want but they are not held accountable" (Peggy (2013). Her quote suggests that not only is the displacement of physical proximity resulting in a loss of intimacy and engagement, but also accountability, as users cannot be held physically responsible for their actions. The interpretation that physical proximity plays a role in ensuring accountability within face-to-face interactions is reinforced further by Komi (2013) when she talks about having an argument via text.

I would say having a cell phone when you are having an argument of any kind and especially a really heated argument lets you say thing you might

not necessarily say in person because you are not there, so you do not have to buildup the confidence to say it, and you are not there to have any repercussions from saying it. Like if you said something really rude to someone and then their retaliation is to punch you in the face. Obviously that is not going to happen if you are having an argument with someone and you say the same thing via text because they cannot physically punch you in the face to respond the worst thing they can do is respond back with another equally as hurtful message (Komi, 2013).

Komi's quote shows how the physical vulnerability of face-to-face interactions is mitigated by CMCs as people can no longer hold them physically accountable.

However, whether the displacement of physical proximity by mobile devices is a positive or a negative change was a contested issue. Some users, such as Peggy, considered it as a good thing since it gave her more confidence, whereas users like Abby (2013) saw it as a bad thing, stating, "I hate how when texting I cannot see people emotions and body language." The majority of the sample (ten out of the eleven participants) was on the fence as they appreciated some of the benefits of CMC, while at the same time recognizing its limitations. The two main reasons users gave for feeling that the displacement of physical proximity was a good thing was that it allowed them to hide undesirable characteristics, and protected them from repercussions. That mobile devices can hide undesirable characteristics is best expressed by Rachel (2013) when she talks about her experiences in high school, "in high school I had the lowest self esteem ever. But when texting it didn't really matter how I looked." And Clare who talked about how she could hide undesirable characteristics even on Skype, "in a way online and face-to-face are different because in a way you are able to do things like hide the aspects that you do not like about yourself. So if you have physical traits that you do not like showing in person you can easily hide them on Facetime or Skype" (Clare, 2013).

The second way participants felt that the displacement of physical proximity was beneficial was that it provides a confidence boost. This is summarized by Clare (2013), in that “I am a lot more confident on my phone then in person I tend to be more forward and blunt and I tend to be actually say what I feel rather than feeling obligated to be polite and then kind of looking happy all the time.” The boost in confidence users are experiencing seems to be connected to the notion of accountability as highlighted earlier by Peggy. Furthermore, the quotes by Komi and Neil propose that the confidence boost users are experiencing when using CMC is twofold. First, because they are not there “in person so they do not have to buildup the confidence to say it” (Komi, 2013), and second, “because they do not have to deal with the repercussions for saying it” (Neil, 2013). Linking this back to Gwen’s dating quotes, using CMC transforms how users might act in person as they are able to mitigate and avoid the repercussions of their actions, resulting in a tension as mobile device user are now considering, or doing things they would not have done in person. This interpretation is reinforced by Gwen when she states, “it is easier to ask [a guy out] over a cell phone because you are not looking at them it is not awkward you just type it in and press send whereas in person the person is there and once you say it, you are like oh are they going to say no? The rejection is really face-to-face and there is more to be nervous over because the person is right there and I think a lot of people are more shy because of that” (Gwen, 2013). This shows how the displacement of physical proximity is affecting basic practices such as meeting a person and asking them out, as the protection of the screen allows users to act in ways they might not have face-to-face.

Another area of negotiation created with the displacement of physical proximity is suggested by Leah when she talks about trust and how it contributes to the formation of a meaningful relationship: “if I am going to trust someone online, especially if it is someone that I might meet or give my address to, I will definitely make sure that I have seen their face in real time, through Skype. I like to be able to have either real time, or real time interaction with them preferably Skype so that I can see their face and make sure they are who they say they are” (Leah, 2013). Leah’s quote suggests that, in order for users to start forming trust, an important element in close relationships, there needs to be a physical verification or connection made with the other person, even if it is through programs such as Skype. This reinforces this thesis’s position that new practices are built upon the practices that came before them. In this example, physical proximity, even if it is simulated proximity through Skype, is still an important element in forming intimate relationships.

The Extension of Emotions and Body Language through the use of Emojis:

Furthermore, the data suggest that mobile devices as platforms for Skype, Facetime and other video mediums are not just displacing physical proximity, but also user’s emotions. This theme is best expressed by Abby (2013) when she says that “you just never know what people are feeling nowadays because they would rather tell you over text message rather than face-to-face. So our cell phones are now mediating our emotions.” When asked if there was a way for users to express the emotions found within face-to-face interactions in text messages the majority of the sample (8) talked about emoticons or emojis, a concept explained by Leah.

One-way of conveying some of the emotions found in face-to-face conversations is emoticons or emojis, I love emojis (Japanese word).

Emojis have a wider range of expressions than emoticons, and are like little faces you can get through an app¹² made for iPhones. I do not thinkroids¹³ have it, but you can get an app on your iPhone that gives you extra little emoticons, but there are some which are really weird like there is a piece of poop that has a smiley face on it. I do not know the purpose of it but it is there. Yeah smiling poop! (Leah, 2013).

The way that emoticons are being used as a simile for the human emotions and body language found in face-to-face interactions is echoed by Gwen (2013) when she discusses her cell phone use as follows:

I usually use a lot of emoticons so people can understand if I am joking or like being serious like I usually if I am joking I will put a little tongue face or I do not know something random like that, or I will put ha ha ha or something like that to make it sound like I am joking because obviously it is hard to convey tone over text message because you cannot tell if I am being sarcastic over text message (Gwen, 2013).

However, using emoticons to express human emotions also comes with its own set of problems. Anna (2013) suggests that one of the problems with expressing emotions through text is that “it is awkward to frame things more emotively by saying I feel like or I think this. There are always the little emoticons or whatever but I always feel like I do not use those seriously.” Anna’s excerpt shows how well emoticons can be used to express certain human emotions, they lack the physical nonverbal cues that tell users how they are being used, and if they are being serious. Komi (2013) suggests that the second problem with using emoticons to convey human emotions is the fact that the “emoticons built into cell phones such as the smiley face, the sad face and the whatever all the faces, are often really random. Like mine has one that is a person with money in their mouth and dollar signs in their eyes and I do not see how that could be appropriately used without just looking weird.” This relates back to Anna’s suggestion that the problem with

¹² App is short for application, which refers to a computer program designed to help users preform an activity.

¹³ Roid is short for Android, which refers to a particular brand of smartphones.

emoticons is that they are not really taken seriously, since they have no equivalent meaning in real life. Neil (2013) stresses the final limitation of emojis, by stating, “texting is very disconnected in a way for me personally. I mean there are only so many emoticons that you can use in a sentence. So in that way I feel like texting is very stagnate, since I am not giving or getting any emotion when I am texting somebody.”

In order to get around the limitations of emoticons, some users have come up with their own ways of expressing themselves such as using asterisks before and after an expression.

One thing I do, that I learnt on MSN from my friends when I was fourteen, was to use two little stars (asterisk *) to describe an action that I was making which did not necessarily have a vocalization. So if I was feeling really frustrated about something instead of writing out I am frustrated it might be *sigh* to exclaim (breaths out) I am signing like that, and then write the rest of my sentence as if I was talking to you in person and I had actually sighed before I made a comment. There have been other times where I have done something similar, but instead of just having a smiley face emoticon I would put on the end of a text a phrase in between two stars like super happy face or something like that to exclaim a lot of excitement. Instead of just writing out in a sentence I am very excited right now, my face looks like this, which is kind of awkward to do (Komi 2013).

Komi’s quote and the different ways users are expressing their emotions through text messages reinforces Clare’s (2013) earlier hypothesis, in which she stated that she believes there are no specific rules to using a mobile device, as users are just using whatever works for them. Holly, Leah and Peggy further reinforced the interpretation that users are just using whatever works for them. Holly (2013) states, “when I am angry I usually put on caps lock.” Leah (2013) uses caps when she was feeling “excited”, “happy” or “crazy”, and Peggy (2013) “usually put an exclamation mark or put the words in capitals only when [she] was yelling at someone.” These quotes reinforce the

hypothesis that users are just using what works for them, and illustrate the problem with developing innovative ways of expressing oneself as different users associate different meanings to an action, such as using capitals.

The final problem with non-visible emotional expressions, even when conveyed and interpreted correctly, was pointed out by Holly when she talked about how computer mediated emotions do not even have to be real.

When you speak face-to-face you have to find words that match what you are saying and your body has to show what you are saying and that you actually mean it. When you text you can add a smiley face, even if you are angry you can just write what you want and then put a smiley face if you do not want to look like you are angry, so it just looks like you are just putting facts” (Holly, 2013).

Holly’s example shows how CMC clash with Grice’s maxim of quality, as digital interactions do not provide the receiver with enough evidence to evaluate whether the speaker’s contribution is actually honest and genuine.

Do the Rules Associated with Face-to-Face Interactions Still Apply to CMC?

This chapter has sought to unpack the three major ways CMC and by proxy mobile devices are negotiating with long-established social norms, resulting in a state of social change and hybrid practices that are comprised of both long-established and popular elements. The confusion these hybrid practices cause was expressed by all eleven participants, each giving different responses when asked whether there were any social rules that users had to follow when texting. However, the new possibilities made possible by CMC, and the different way this study’s participants are engaging with them, shows how a societal shift is taking place, as long-established societal norms are negotiating with popular culture, resulting in hybrid practices comprised of both face-to-face and digital elements. Finally, the formation of hybrid practices as users are negotiating what

is appropriate with each other as discussed within this chapter shows how one of the side effects of CMC is that a shift is taking place as rich conversations have shifted toward connection-based conversations. Where it is more important to know lots of people, as opposed to the quality of the relationships as suggested by Clare's example of speed friending. In short, the new digital generation arguably results in a culture where speed and the maxim of manner, which dictates that conversationalists should remain clear, brief and orderly, avoiding obscurity and ambiguity are the most important elements of computer mediated conversations as users are now able to meet so many people that they are no longer taking the time to engage with one another and form intimate and meaningful relationships.

While this thesis utilized a small sample, the findings of this study are supported by the research already done on the impact of social media websites, such as Facebook and Twitter, and the role CMC, is now playing in people's lives. For example, the research done by Grasmuck et al. (2008), on identity construction on Facebook¹⁴, highlights the similarities between Facebook and mobile device users. Grasmuck et al. discuss how the Internet "makes it possible for people to reinvent themselves through the production of new identities", but also that "the personal environment [of Facebook, just like mobile devices users] places constraints on the freedom of identity claims" (Grasmuck et al., 2008:1818). In the same way, mobile devices and social media websites provide users with new leverage for selective self-presentation by allowing "users to have control over their information and who sees it", enabling "users to present different self-images to different people" (Grasmuck et al., 2008:1821-1823). In addition, Danah

¹⁴ This study bases its findings around the analysis of 63 Facebook accounts.

Boyd's (2010) Twitter research shows how "social media technologies collapse multiple audiences into single contexts, making it difficult for people to use the same techniques online that they do in face-to-face conversations" (114). Finally, Michael Hardey's (2002) research on online and offline "identities and how relationships are formed and negotiated within Internet environments that offer opportunities to meet people on-line and move into relationships off-line," (570) supports this thesis's claim that mobile devices as proxies for the Internet and social media websites are transforming intimate relationships as users are connected to their peers 24/7, and can now access each other's personal information without even talking to each other. These studies help to validate the findings of this thesis, while showing how mobile devices blur the lines between cell phones, social media websites, a computer and the Internet, as users are no longer differentiating between these technologies.

Summary:

The first objective of this chapter was to show how using an approach that takes into account how users are using mobile devices, as opposed to who has access, can provide researchers with much richer explanations. The second objective of this chapter was to demonstrate how one of the side effects of CMC is a social shift in societal communicative practices. Conversations have shifted from rich conversations involving not only verbal, but nonverbal communication, requiring people to engage with each other and take into account their responses and emotions; to connection based conversations where the most important things are convenience, clarity, efficacy and accessing information, sometimes without other people even knowing. In short, the new digital conversations made possible by mobile devices are causing a paradigm shift from

meaningful conversations to short information exchanges, as users seek to be connected to as many people as possible in order to gain access to social or economic opportunities as suggested in chapters three and four. Finally, the finding of this study show that Tapscott (1999) and Prensky (2001) are partially correct, as the youth of today are defined by technology, but there is no unified, stabilized set of practices associated with using a mobile device as highlighted by the confusion of this study's participants surrounding which social rules to follow. Instead, "rather than forming a distinct cyberspace culture, the Internet [and by proxy mobile devices] are opening up new opportunities to shape the extant contours and contents of social life" (Hardey, 2002). This thesis has argued that because there is no distinct cyberspace culture it is important for researchers to develop a richer sociological perspective that recognizes how people, things, and the interactivity between them work together to co-produce society. The advancement of mobile communication technologies results in the renegotiation of stabilized cultural practices inherent within face-to-face social relations. My research shows that Carleton students see their use of mobile technology as increasingly and undeniably central to the way they communicate as individuals, form and express their social identities and form collectivities, and that cell phones are having very real consequences in producing the reality that we jointly inhabit with one another.

Chapter Six: Conclusion

The objective of this thesis is to show how using actor network-theory and the social construction of technology can help to provide richer theoretical insights into the social impact of cell phones. Specifically, it explored how the impact of cell phones goes beyond the physical form of the phone, to include its use, as digital technologies have become the tools that contemporary young people are using to experience the world. The findings of this thesis suggest that, while there is a technology shift taking place, reshaping social practices, it has not yet resulted in a universal mobile culture, as suggested by Goggin (2009). Instead, this shift is resulting in a period of uncertainty and multiple subcultures, as the participants illustrate that there are different rules, practices and behaviors depending on the social group they are interacting with and their level of familiarity with it. In addition, by conducting interviews, I was able to demonstrate the dependency young people have on mobile devices, especially when it comes to forming and maintaining social networks, and communicating and accessing information. While the benefits and consequences of mobile devices within Canadian society are still being debated by academics and users alike, the findings of this study clearly indicate a shift in how young people are communicating, as well as the large role mobile devices are playing as platforms for expression and sources of information in their daily lives.

The major advantage of using a sociotechnical approach is that it offers researchers and decision makers to develop more specific studies that can provide a more complete perspective upon which to base their decisions. Thinking of socio-technological change as a technical system, comprised of multiple components, means that researchers can begin to predict how the introduction of a new element might be integrated into, or

upset the balance of pre-existing social networks and practices. Finally, while there is no doubt that mobile devices are making our lives easier by combining multiple technologies into one handy package, this thesis has sought to address how the adoption of new technologies can have unforeseen benefits and cost through its analysis of face-to-face and digital conversations.

Some areas for additional inquiry and expansion uncovered by this study are: the differential ways each gender is using mobile devices; how mobile devices are being used for digital parenting; the development and consequences of speed friending; how mobile devices are being used as isolation devices in order to protect their users from awkward real life encounters; and as emancipation or freedom devices for teenagers. The sheer number of questions unexplored shows why more research using a more in-depth approach to analyze complex socio-technological change is necessary. This is reinforced by Andrew Moore, when he calls for “economists, anthropologists, political scientists, and psychologists... to interpret the effects of these new technologies” (Moore, 2012: 266). Because to paraphrase Toffler (1980), once we realize that there is a negotiation-taking place between the old ways and the new ways that seek to supplant them, we are given a powerful key to understanding and changing the world.

Appendices

Appendix a: Carleton Ethics Clearance

Carleton University Research Office
Research Ethics Board
1325 Dunton Tower
1125 Colonel By Drive
Ottawa, ON K1S 5B6 Canada
Tel: 613-520-2517
ethics@carleton.ca

Ethics Clearance Form

This is to certify that the Carleton University Research Ethics Board has examined the application for ethical clearance. The REB found the research project to meet appropriate ethical standards as outlined in the *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans, 2nd edition* and, the *Carleton University Policies and Procedures for the Ethical Conduct of Research*.

X New clearance

☐ **Renewal of original clearance**

Original date of clearance:

Date of clearance	28 March 2013
Researchers	Benjamin Todd, Master's student
Department	Sociology and Anthropology
Supervisor	Prof. Alexis Shotwell, Sociology and Anthropology
Project number	13-1155
Title of project	An Analysis of how Mobile Devices Influence Youth Social Identity

Clearance expires: **31 May 2014**

All researchers are governed by the following conditions:

Annual Status Report: You are required to submit an Annual Status Report to either renew clearance or close the file. Failure to submit the Annual Status Report will result in the immediate suspension of the project. Funded projects will have accounts suspended until the report is submitted and approved.

Changes to the project: Any changes to the project must be submitted to the Carleton University Research Ethics Board for approval. All changes must be approved prior to the continuance of the research.

Adverse events: Should any participant suffer adversely from their participation in the project you are required to report the matter to the Carleton University Research Ethics Board. You must submit a written record of the event and indicate what steps you have taken to resolve the situation.

Suspension or termination of clearance: Failure to conduct the research in accordance with the principles of the *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans, 2nd edition* and the *Carleton University Policies and Procedures for the Ethical Conduct of Research* may result in the suspension or termination of the research project.

Andy Adler, Chair
Carleton University Research Ethics Board

Louise Heslop, Vice-Chair
Carleton University Research Ethics Board

Appendix b: Letter of Invitation

Department of Sociology and Anthropology
B 742 Loeb, 1125 Colonel By Drive
Ottawa, Canada K1S 5B6
Tel: (613) 520-2582
Fax: (613) 520-4062

April 4th, 2013

Dear Honorable & Name,

Master's Research on How Mobile Devices Influence Youth Social Identities.

My name is Benjamin Todd, and I am currently a Master's student at Carleton University. My MA research focuses on young peoples' use of mobile devices and their reliance on these devices. Specifically, I aim to contribute to the debate around how young people are engaging with these new technologies and the roles individuals' are adopting in response to these technologies. For example, is it possible to be "one of the popular kids" if you do not own a mobile device?

I am contacting you in order to inquire about the possibility of accessing the Psychology Department's first year research participant pool. I am looking for participants willing to conduct (45 min) semi-structured interviews between the ages of (17-20) on a purely voluntary basis. All participants will be provided with and required to sign an informed consent form that acknowledges they are willing participants over the age of 16. Participants will also be asked to keep a technology journal for one day during an average week which describes their use of mobile devices such as cell phones and computers. These journals will be emailed to the researcher to help them compare how the use of communication technologies has changed over time, while potentially revealing unforeseen themes. These journals will not be returned to the participants, but be saved onto a hard drive or printed out and the emails deleted.

The purpose of this study is to understand the social impact that mobile devices are having on Canadian society. The anonymity of participants will be respected within this study. Although the information gathered will be utilized for my research, the name and identity of participants will not be disclosed or used within my research. Furthermore, only my supervisor and myself will have access to the data. All of the data gathered will be stored in a locked drawer or safety deposit box when not in use for future related studies.

Because I am asking participants to record and reveal information that might be considered private. There is potential for psychological risk as some of the questions about participant's popularity and life changing events may elicit emotional responses or conjure up unpleasant experiences. To account for these risks participants can stop at anytime, and I will provide an information sheet of phone numbers for youth counseling services such as the Paul Menton Centre and Kids help lines.

The interviews will be recorded for partial transcription and every interviewee will be given a pseudonym. All of the information I gather will be locked up when not in use, so as to ensure

participants personal privacy. There are no foreseeable risks to students by participating, and I am more than willing to undergo any ethics processes you deem necessary. Participants are not required to answer any question that makes them feel uncomfortable or threatened and may withdraw at anytime before July 1st 2013. If you have any concerns or questions please feel free to contact me at benjamin_todd@carleton.ca, or my supervisor Dr. Alexis Shotwell at alexis_shotwell@carleton.ca. This research project was reviewed by the Carleton Research Ethics Board and has received ethics clearance until (May 31, 2014). If you have any questions or concerns about the board's involvement please feel free to contact Dr. Andy Alder (Chair), or Dr. Louise Heslop (Vice-Chair),

Research Ethics Board
Carleton University Research Office
1125 Colonel By Drive,
Ottawa, Ontario K1S 5B6,
Tel: 613-520-2517, E-mail: ethics@carleton.ca.

I look forward to hearing from you,

Sincerely,

Benjamin Todd.

E-mail: benjamin_todd@carleton.ca

Cell: [REDACTED]

Appendix c: Sample Technology Journal

The goal of these technology journals are to try and outline how you are using technologies like cell phones, tablet computers such as Ipads and e-readers, Ipods, and laptops and desktop computers during an average day; and how using these technologies allow you to socialize. You are not required to reveal anything which makes you uncomfortable, but please try to include as much detail as possible.

Sample Technology Journal REB

Friday September 23, 2013

8:30am: Woke up, turned off my phone alarm and checked my emails and text messages.

8:45-9:15am: I ate breakfast while using my cell phone to text message my friends and surf the web.

9:15am: I used my Iphone to take pictures of my school outfit to post on Facebook and Instagram.

9:29am: I used my phone to tweeted that it was raining outside ✍

9:30am: Spent about (15 min) waiting for the school bus listening to music on my phone and texting my friends.

10:30am: Spent 30 mins on the computer checking my Facebook newsfeed, posting on my friends walls and responding to messages.

11:30am: Used my phone while in the bathroom to read.

11:45am: I texted a bunch of friends to meet up for lunch after class. Added the cute boy from my science class to Facebook.

12:00am: I thought I had lost my cell phone and had a mini panic attack, but it was in my backpack.

1:00pm: I used my phone to look up the answer to how tall is Mount Everest in class.

1:00pm-2:15pm: I used my Ipad to take notes in class, saved them to Dropbox so I can access them on my laptop tonight when doing my homework.

2:30pm: Played plants vs zombies and angry birds on my phone for half an hour during recess.

3:00pm-3:20pm: Final assembly was boring so I surfed the Internet on my phone and texted friends.

3:30pm: I called my mother to pick me up from school.

3:45-4:20pm: I listened to play music on my Iphone for about 35 mins on the way home from school.

4:25-6:00pm: Used my laptop to do my homework, while talking to my friends on Facebook chat and texting on my Iphone. I joined pinterest and spent about 20 mins looking for new hairstyles.

6:00-6:30pm: I ate supper with my family while texting and making plans with my friends to hang out with them downtown tonight.

7:30pm: Used Skype on my Ipad to talk to my best friend to see if she approved of what I planned on wearing to the party tonight downtown.

7:45pm: I walked to the bus stop while chatting on my phone to my friends just in case anything happened. (This makes me feel safer when I am going out alone at night).

8:00-8:15pm: I played Temple Run on my Galaxy 3 while on the bus.

8:20pm: Texted my friends once I got downtown and we met up.

8:30: I used my Iphone to take pictures and record my friend singing karaoke. One of my friends boyfriend broke up with her via texts, what a jerk!

11pm: I used my cell phone to call for a taxi home.

11:30pm: I got ready for bed, I turned off my cell phone alarm since I can sleep in tomorrow and plugged it into charge.

Appendix d: Interview Questions

1. Do you own a cell phone?
 - a. Why did you originally start using a cell phone?
 - b. Can you elaborate on why you do not own a cell phone?
2. Does your cell phone have a data plan?
3. Has the reason you use a cell phone changed since you bought it?
4. What does the term mobile phone mean to you?
5. At what age did you first start using a cell phone?
6. Can you describe how you use a cell phone during an average work day?
7. Has owning a mobile phone allowed you to access new social groups?
 - a. Can you give me some examples?
8. Does your cell phone play an important role in your social life?
 - a. Can you give me some examples?
9. What kind of different expectations do you think there are between face-to-face interactions and online interactions?
10. Has your mobile phone ever allowed you to act in a way you might not have face-to-face?
11. What are your main reasons for normally joining an online community?
12. Do you think it is possible to be successful without using a mobile phone, if success is defined as economic and social success within (Canada/Singapore).
13. Do you ever turn off you cell phone?
14. When do you first use your cell phone in the morning on average?
15. How do you feel when you forget your cell phone at home for the day?
16. Are there social expectations or rule for online or non-physical interactions?
17. How do you think online rules are enforced?
18. Would you ever consider giving up your cell phone? If yes why? If no why not?
19. Does your phone allow you to do anything you could not do before?
20. Is there anything not addressed in this interview that I should know about mobile phones and how individuals are using them to interact?

If you could please state your name, age and what you do for a living that would be great.
That's great, thank you so much for your time.

Appendix f: Consent Form

Department of Sociology and Anthropology
B 742 Loeb. 1125 Colonel By Drive
Ottawa, Canada K1S 5B6
Tel: (613) 520-2582
Fax: (613) 520-4062

Research Consent Form

Title of research project: How Mobile Devices Influence Youth Identity

Ethics clearance date: 28 March 2013

Expiration of ethics clearance: 31 May 2014 (renewable)

You have been invited to participate in a research project entitled How Mobile Devices Influence Youth Identity. The sole researcher of this project is Benjamin Todd (student at Carleton University, Canada) and is available by telephone [REDACTED] or by E-mail (benjamin_todd@carleton.ca). The research supervisor, Dr. Alexis Shotwell, is also available by telephone (1-613-520-2600 Ext: 3082) or by E-mail (alexis_shotwell@carleton.ca) if any further questions arise.

The purpose of this study is to understand the social impact that mobile devices are having on Canadian society. By participating in this research project you have agreed to engage in an interview led by me, Benjamin Todd.

I will ask a series of questions pertaining to my research, and you will be invited to answer these questions thoroughly to the best of your ability. You are not required to answer any question that makes you feel uncomfortable or threatened.

Anonymity will be respected within this study. Although the information gathered will be utilized for my research, your name and identity will not be disclosed. Furthermore, only my supervisor and I will have access to the recordings, transcriptions or notes taken during the interview.

Finally, you will be asked to keep a technology journal for one day during an average week which describes your use of mobile devices such as cell phones and computers.

These journals will be emailed to me to help me compare how the use of communication technologies has changed overtime, while potentially revealing unforeseen themes. This journal will not be returned to you, but be saved onto a hard drive or printed out and the emails deleted.

Because I am asking you to record and reveal information that might be considered private. There is potential for psychological risk as some of the questions about popularity and life changing events may elicit emotional responses or conjure up unpleasant experiences. To account for these risks you can stop at anytime.

You are not required to reveal any information that requires you to bring up painful memories or feel uncomfortable. If you decide to submit a technology journal it will be completely voluntary and I will have no control over what they decide to reveal and submit. The objective of these journals is to understand how dependant younger generations are on their cell phones when compared to previous generations.

As a voluntary participant in this study, you have the right to withdraw before July 1st 2013 by contacting me by telephone or email. Should you withdraw all of your data will be destroyed.

I have provided the phone numbers for the Paul Menton Centre and Kids help lines at the end of this form should you require any assistance with issues that have upset you as a result of your participation in this study.

During the course of this study all of the data gathered will be kept and stored in a secure location to which only I will have access. All data will be kept for future related studies on this topic.

This research project was reviewed by the Carleton University Research Ethics Board and has received ethics clearance until (May 31, 2014). If you have any questions or concerns about the board's involvement please feel free to contact Dr. Andy Alder (Chair), or Dr. Louise Heslop (Vice-Chair):

Carleton University Research Ethics Board
Carleton University Research Office
1125 Colonel By Drive
Ottawa, Ontario K1S 5B6
Tel: 613-520-2517 E-mail: ethics@carleton.ca

By signing this document, I confirm that I am over the age of 16 and have read and understood the above information. I give my consent to participate in the research project as stated above.

Signature of participant

Date

Signature of researcher

Date

Please retain a copy of this document for your records

Counseling Services:

Paul Menton Centre for Students with Disabilities
Tel: 613.520.6608, TTY: 613.520.3937
Fax: 613.520.3995
501 University Centre, 1125 Colonel By Dr,
Ottawa, ON, Canada, K1S 5B6

Kids Helpline (Anonymous)
Helpline: 1-800-668-6868

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