

**Mobile Hybridity:
Supporting Personal and Romantic Relationships with
Mobile Phones in Digitally Emergent Spaces**

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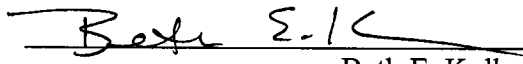
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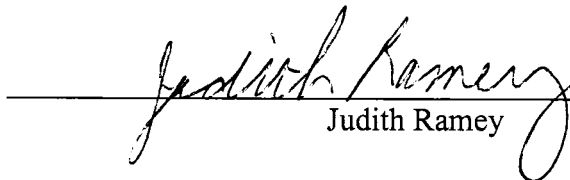
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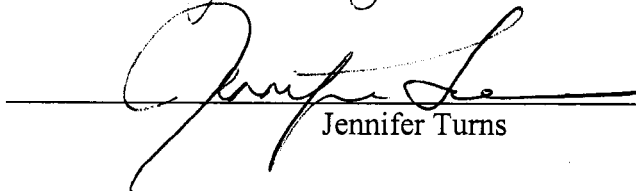

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Abstract

Mobile Hybridity: Supporting Personal and Romantic Relationships with
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Mobile phones are a global phenomenon and can be readily found in places as technologically disparate as Japan and sub-Saharan Africa. Their sociological impact in these diverse cultural and technological contexts is rich because, on top of serving practical functions related to communication, information exchange, and entertainment, the device holds complex symbolic meanings.

This dissertation examines how mobile phones support intimate personal and romantic relationships in digitally emergent places, i.e., locations that are developing pervasive digital telecommunication and media infrastructure. Two field studies are reported here from post-colonial, digitally emergent settings. The first study in Tashkent, Uzbekistan, is a prelude to the main study in Bangalore, India. The Tashkent study provided a snapshot of mobile phone use that supports personal relationships. This study used interviews of mobile service providers, interviews of users and nonusers, and participant observation to describe the cultural, political, economic, and technological contexts that shape mobile phone use. The study revealed several social uses and symbolic meanings of mobile phones.

The main study reported in this dissertation focuses on fieldwork with young people who work in the global 24/7 environment of Bangalore. This study used surveys, interviews, participant observation, and mobile diaries to document attitudes and behaviors surrounding mobile phone communication with family members and romantic partners. The study revealed that besides cultural influences, the participants' unique circumstances as people who have migrated to a new city and often work the graveyard shift affect their use of the mobile.

This dissertation constructs a new theory of "mobile hybridity" that is framed by hybridity theory, or the evolution of new behaviors and spaces from the contact and fusion of multiple influences. The culturally shifting and blending landscape occupied by users often fractures their intimate relationships with physical distance or cultural differences. Cyborg, or seamlessly integrated, use of mobile phones helps users negotiate these relationships and the liminal spaces created by the close coupling of modern urban life with conservative social values, the co-existence of the global and the local, and the tension experienced by young people who want to be independent but also connected with loved ones.

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Portions of this dissertation were substantially revised from previously published material. Chapter 2 contains revised excerpts from Wei and Kolko (2005a), published in the *New Review of Hypermedia and Multimedia*. Chapter 3 is based on Wei and Kolko (2005b), presented at the International Professional Communication Conference in Limerick, Ireland.

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Dedication

To the memory of Dr. Wei Yu Sun, who inspired my own doctoral studies

Introduction

Mobile phones have been observed to “represent more than just a new technology but something of a new *type* of technology” (Brown, 2001, p. 5), one that merits innovative research to document the unforeseen ways they are becoming integrated into society and transforming social practices. Mobiles phones are enthusiastically adopted in an incredibly diverse range of societies, including developing countries. Impacts and changes wrought by mobiles, the internet, and other mediated communication methods can be seen in the way people do business, socially mobilize, and participate in the political process. Likewise, these technologies have been credited with remarkable transformations in how people initiate and maintain personal relationships. It is possible to meet people in online venues as well as maintain contact, arrange meetings, and deepen an emotional connection through mediated means such as instant messaging, email, blogs, and mobile phones.

This dissertation considers how young, urban, middle-class people use mobile phones to support personal relationships in Tashkent, Uzbekistan, and romantic relationships in Bangalore, India. These two post-colonial settings were chosen as research sites for their digitally emergent, hybrid cultures. The local cultures of Tashkent and Bangalore are heterogeneous mixtures and fusions that reflect the influences of historical ethnic populations, former colonizers, migration of workers to cities, transnational networks, global media messages, and international products and services, e.g., Coca-Cola and McDonalds. Besides being post-colonial, these

locations are digitally emergent—places that are in the midst of developing pervasive, digital telecommunication and media infrastructure. These are places that are rapidly developing economically and technologically with high tech, modern cities situated beside agrarian areas with no telephone system at all.

Such post-colonial, digitally emergent settings are significant consumers of mobile phone lines. In many countries, the number of mobile phone lines far surpasses fixed-line telephones or PCs. For example, in Afghanistan, over 92 percent of the telephone lines in 2005 were cellular (International Telecommunication Union, 2007). The growing presence of mobile phones merits study of their sociological impact in these regions. However, mobile phone studies in these “developing countries” are often set within the context of development projects and focus on economic uses. Such projects contrast sharply with studies in highly developed countries where personal, sometimes frivolous, uses of mobile phones are routinely examined. This dissertation takes the themes of personal mobile phone use for supporting intimate relationships and applies them in these digitally emergent settings to gather novel insights.

This project’s use of post-colonial, digitally emergent settings offers fresh perspectives on technology use. Given that mobiles are appearing in an environment where digital technologies are relatively novel and where the technology was not developed, there may be unexpected disjunctures with the metaphors that drive the technological design (Kolko, 2002). And in hybrid societies like Tashkent and Bangalore, whose residents have historically absorbed new ideas and cultural

elements, insights can be gained about how people, who are experts at absorbing and assimilating new influences, are incorporating mobiles into an existing ecology of information and communication technologies.

Two serial studies were conducted, the first focusing on mobile phone use for personal relationships in general in Tashkent, which informed a second study emphasizing mobile phones and romantic relationships in Bangalore. Considering intimate personal relationships and especially romantic relationships is especially productive in settings like Tashkent and Bangalore, which are still socially conservative even as they experience swift “modernization.” The close connection that a person may have with his or her mobile phone combined with the structured nature of dating and courtship in traditional societies creates a powerful opportunity to observe how technology supports intimate personal relationships. This project is not only a chance to see how new technologies can support time-honored rituals and behaviors but also an occasion to consider what compels people to incorporate mobile phones into their personal and romantic relationships.

In the context of Bangalore, use of the mobile phone is so natural and seamlessly incorporated into everyday behaviors that it is cyborg-like. Besides explaining the ease with which people have taken to mobile phones, cyborg theory is another lens through which to understand how users construct new identities with their mobile phone use in order to navigate the multiple spheres that they occupy, especially spheres that may seem disjointed such as parents’ values versus individual desires, or Indian culture versus global culture.

Embedded within the adoption process are opportunities for mobile technology to come into conflict with traditional patterns or values, for example, when it allows teenagers to circumvent parental controls in their romantic choices. In that scenario, the mobile facilitates and gives new outlets for age-old compulsions rather than creating brand-new desires. However, some of the behaviors that arise are as hybrid as the cultures under observation and reflect a merger of the old and contemporary, and the local and the global, like use of the mobile phone as a virtual leash to give teenagers freedom to roam away from home under the ostensible supervision of parents, or as a means for a young person to get to know a potential fiancé who lives overseas and who has already been vetted and approved by parents. It is such types of behaviors with mobile phones that this project investigates—those that give new expression to old impulses as well as those that are hybrids of existing customs that suit the evolving cultural environments of Tashkent and Bangalore. As these behaviors are documented and theorized in this dissertation, a new theory of mobile hybridity is put forth, one that articulates how mobile phones are a tool that helps users navigate the cultural flows of a hybrid world.

Finally, it should be mentioned that while this project explores technology use in the context of “modernizing” and “digitally developing” societies, it is also conscious of the problematic nature of characterizing the technological landscapes of Tashkent and Bangalore by comparing them with Western notions of development. Such a vocabulary of development suggests a continuum of technological progress that potentially privileges Western-style modernization and hints at an inevitable

march towards a technological future patterned after the West. However, by using such vocabulary, this project seeks to engage in dialogue with existing literature published in the West about technology use and adoption rather than advocate for a specific model of innovation diffusion. It seeks to study mobile phone and technology use in Tashkent and Bangalore empirically rather than to judge these countries' state of development.

With this introduction to the area of investigation, the organization of this dissertation is now described. Chapter 1 sets out the problem space for this dissertation: describing how mobiles are used in hybrid societies to support personal and romantic relationships and laying the groundwork for a theory of mobile hybridity that shows how mobile technology helps users to bridge gaps between the multiple worlds that they live in. In this chapter, the hybrid, digitally emergent research sites of Tashkent and Bangalore are briefly described, along with the research questions related to mobile phones and personal and romantic relationships. Key terms are defined, and the scope and limitations of this project are described. The broader significance of the research questions is also offered.

Chapter 2 discusses the theoretical framework of this project and the empirical literature that drove its design and analysis. This project is framed by the overarching critical theories of hybridity and cyborgs, and it is informed by the body of empirical studies of computer-mediated communication and mobile phone use. First, literature related to hybridity, which draws from post-colonialism and globalization is reviewed. Second, literature related to cyborg theory and embodied use of technology, with a

small detour through the social shaping of technology, is presented. Third, themes from computer-mediated communication especially with regards to intimate relationships and hybridity are introduced. Computer-mediated communication literature is presented because of its kinship with mobile phones as mediated communication and because computers are included in the communications repertoire of participants. Finally, the literature related to mobile phone use is reviewed emphasizing mobile phone use in digitally emergent societies, for supporting personal and romantic relationships, and as a site of hybridity.

Chapter 3 discusses the study conducted in Tashkent and is a prelude to the main study conducted in Bangalore. Because less is known about mobile phone use in Central Asia, the purpose of this study was to situate this use in the broader context of a political, cultural, and technological infrastructure. The research provides a broad overview of how young people and business people in one hybrid society are using mobile phones in general to support personal relationships. The preliminary patterns of hybrid mobile phone use that were identified in Tashkent sensitized the study in Bangalore towards the potential impact of mobile phone use on family relationships and the mobile phone as an entrant into existing ecologies of personal communication technology. In particular, it provided a glimpse of how young people keep in touch with family and friends, echoing other mobile studies of youth.

Chapter 4 discusses the main study conducted in Bangalore. This study looked at how the mobile phone is used to support the personal and especially romantic relationships of young people who are primarily involved in Bangalore's 24/7 global

offshoring sector. The observed behaviors are interpreted through the dual lenses of hybridity and cyborg theory to explain how mobile phones are seamlessly integrated into users' communications repertoires and how the phones are used to negotiate the multiple spaces that users occupy, whether it is home and work, their native place and Bangalore, Indian culture and global culture, or parental wishes and individual desire.

Chapter 5 synthetically discusses the two studies in Tashkent and Bangalore. It draws out elements of both studies that can be extended as general knowledge of how mobile phones support personal and romantic relationships in digitally emergent, hybrid society. And particularly based on the results of the Bangalore study, a theory of mobile hybridity is proposed, which suggests how mobile phones can be bridging tools for people who live in a shifting cultural landscape and simultaneously occupy multiple spaces. The chapter concludes with final remarks on broad lessons of this project and future directions for research.

Chapter 1: Statement of Problem

The transformative nature of mobile phone use can be observed worldwide in a variety of places. Mobiles are ubiquitous communication tools and fashion accessories in highly wired societies such as Scandinavia and Japan. Many studies of mobile phone use in developed parts of the world emphasize the close weaving of the mobile into the daily practices and rituals of young people (Taylor & Harper, 2003; Ito & Okabe, 2003; Grinter & Eldridge, 2003), but this coupling can also be seen in older people whose habits and behaviors related to meeting people and being available have been changed by the mobile (Gant & Kiesler, 2001; Ling & Yttri, 2002). Mobile technology has also become important in developing regions such as sub-Saharan Africa and South Asia, for example, by allowing countries to “leapfrog” and take advantage of information and communication technologies without depending on landlines. Numerous studies have been made of the phone as a tool that can support microfinance and development projects as well as facilitate social communication in such places (Donner, 2005b), for instance, through the Village Phone program in rural Bangladesh (Aminuzzaman, Baldersheim, & Jamil, 2003). And if the technology is expensive by local standards, users can access mobiles by sharing or borrowing from friends and family, for example, as they do in Africa (Vodafone, 2005). In these poorer areas, mobile phones are a much needed gateway to the resources of the information age. Given the range of societies where mobile

devices are found, mobile phones are clearly ubiquitous tools with utility for a broad range of users.

This dissertation adds to the conversation about mobile phones by looking at their use in a specific kind of space—post-colonial, digitally emergent environments—and by a specific kind of people—young, urban, middle-class people. These are societies that have previously been occupied by a foreign power (Russia in the case of Uzbekistan and Great Britain in the case of India) and are experiencing rapid growth of digital telecommunication systems, superseding existing analog technologies. The use of the neologism “digitally emergent” to describe the spread of these technologies in these countries has advantages over more familiar terms such as “modernizing” or “developing” or “peripheral” for reasons that are explained in 1.3 Definition of Key Terms. Chiefly, “digitally emergent” captures the fact that these places are in the midst of developing pervasive, digital telecommunication and media infrastructure. This definition distinguishes such locations as Tashkent, Uzbekistan, and Bangalore, India, from places that are saturated with modern, reliable technology like Japan as well as from very poor places like sub-Saharan Africa that do not have electricity or telephone service.

Studies of mobile phone use in post-colonial, digitally emergent space can simultaneously problematize and enrich our understanding of how people adopt and adapt communication technology. The post-colonial quality allows researchers to examine populations that have a tradition of absorbing new and foreign influences and are a cultural mix of ethnicities and languages because of migration and

globalization. It is this blending of cultures that creates a hybrid space like the borderlands of Gloria Anzaldúa (1999) that makes these settings fertile ground for studies of mobile phone use. This dissertation argues that the mobile phone is used in hybrid ways by these hybrid people. The digitally emergent quality of these spaces provides a rare opportunity to examine a culture where mobiles have been relatively recently introduced, and the cities are still surrounded by rural areas where mobiles are much less present. The technology has not become so inextricably tangled with daily practices that it is impossible to see whether social practices are due to cultural decisions or simply to the ubiquitous availability of mobiles. Further, the availability of other information and communication technologies (ICT) such as fixed-line phones or internet (which may not be present in developing countries that are “leapfrogging” or bypassing landlines) allows researchers to observe communication choices being made within an ecology of ICT.

1.1 Problem Area

Within this space of post-colonial, digitally emergent societies, the purpose of this dissertation is to consider how young, urban, middle-class people use mobile phones alongside other technologies to support personal relationships, especially romantic ones. This dissertation argues that these types of users in these types of hybrid spaces are worthy of study because of the unique ways they use mobile phones as they occupy the multiple cultural spaces that make up their lives. The mobile phone is crucial to these users’ abilities to navigate through a living and shifting

cultural landscape. This use of mobile phones supports a new theory of mobile hybridity, one that draws from hybridity and cyborg theory.

The impact of mobile phones on personal lives has long captured the public imagination. Within the last few years, news stories have appeared about the validity or decorum of using SMS to break up with a girlfriend (Noguchi, 2005), initiate a Muslim divorce (Mobile divorce, 2001), make Catholic confession (Thou shalt, 2003), or fire someone from a job (Fretland, 2006). Popular press articles abound about etiquette for mobile use in public (see Taub, 2001, for an example), and studies have focused on why mobile phone use is “annoying” in public (Monk, Carroll, Parker, & Blythe, 2004; Monk, Fellas, & Ley, 2004). Even very small children, younger than the age of ten, have their own mobile phones (Charlton, Panting, & Hannan, 2002; Oksman & Rautiainen, 2003; Bhat, 2006). Mobiles are currently being used for “everything,” including buying movie tickets, catching up on the news, looking for directions, mobilizing social groups (Rheingold, 2002), and even potentially answering pornographic needs (Kamvar & Baluja, 2006).

Given the ubiquity and pervasiveness of the device, it is poised to be a tool that people in hybrid, digitally emergent space use to occupy the borderlands that they live in where various cultural influences merge or mingle. Considering how mobile phones are used to support personal and romantic relationships can clarify how their hybrid users are occupying these spaces. This project is most concerned with one type of user—young, urban, middle-class professionals—who have the exigency and financial resources to use the mobile phone. These are people who are constantly on

the move between home, work, and friends, and they are often migratory people who have come to a city for work. These people have especially developed a dependence on mobile phones that might be termed cyborg. Cyborg use of mobile phones is natural and seamless, such that users would have to learn from scratch how to communicate with others if their mobile phones were taken away, much like eyeglass wearers would have to re-learn how to interact with the world if they lost their glasses. This is not to argue that mobile phones are indispensable to users, but rather that users are accustomed to the steady, constant presence of the device and would feel a loss without it.

This dissertation presents two cases, but it is not a comparative study. The two studies are offered instead to give a better snapshot of the range of issues that surround use of the mobile phone and other technologies to support personal relationships in post-colonial, digitally emergent societies. The first study in Tashkent, Uzbekistan, of mobile phone use to support personal relationships may be considered a prelude to the second one in Bangalore, India, of mobile phone use for supporting romantic relationships. The research in Uzbekistan provided a broad brushstroke view of how young people and business people in this hybrid society perceive mobile phones and use them to support personal relationships. The findings of this study informed the design of the Bangalore study. Subsequent fieldwork in Uzbekistan also suggested the productiveness of investigating mobile phone use for supporting romantic relationships: one story that was collected included a girl texting love messages to the boyfriend of whom her mother disapproved. Other stories highlighted

the utility of using romantic relationships to study questions of hybridity. For example, one story highlighted the disjunctures between modern notions of dating and traditional values of arranged marriage; in this instance, a man broke things off with his girlfriend in Tashkent to return to his village where his parents had found a suitable bride for him. The findings of the Tashkent study and such stories of technology, hybridity, and romance drove the Bangalore study.

The cities of Tashkent and Bangalore were selected as the research sites because they are experiencing rapid technological progress within countries that are struggling with poverty and human development issues. These two research sites provide complementary snapshots of digitally emergent societies. Both regions have ethnic and economic diversity. The two countries are socially conservative especially with regards to romantic matters: arranged marriages are common, premarital sex is taboo, and homosexuality is not widely acknowledged. Mobile phone use is also popular in both places. However, the two regions are distinct because they have unique histories, their former colonizers have vastly different cultural heritages, and they achieved independence at different times. They are also in differing levels of digital development: Tashkent has notoriously unreliable telephone and electrical systems, whereas Bangalore is famous for its global offshoring sector supporting information technology and financial businesses, but is a digital blip in a country that has about one telephone line for every nine people (International Telecommunication Union, 2007). The two research sites offer a unique opportunity to observe a comparatively novice population adapt mobile phones to their own cultural needs.

Studying socially conservative, non-Western societies' use of mobile phones can challenge existing notions of usability. The different languages, histories, social values, and infrastructures lend themselves to unexpected uses of mobiles, which in turn may enrich our understanding of what satisfying mobile design can be.

1.2 Research Questions

In light of the contributions that hybrid settings like Tashkent and Bangalore may make to furthering knowledge about novel uses and adaptations of the mobile phone for personal and romantic relationships, the following research questions were proposed:

- RQ1. How do urban, middle-class people in Tashkent use mobile phones to support their personal relationships?
 - a. What mobile service infrastructure is available?
 - b. What is the cultural and political setting of mobile phone use?
- RQ2. How do young, urban, middle-class people in Bangalore use mobile phones to support their romantic relationships?
 - a. What emergent behaviors are associated with mobile phones?
 - b. What are the rituals and customs of mobile phone use for romantic relationships?
 - c. How are mobile phones being used within a communications repertoire of other ICT to support romantic relationships?

- d. What mobile phone use behaviors suggest “hybrid” use of mobiles?

In addressing these questions, this project considers the broader context and theory in which technological phenomena occur in order to elucidate the changes in cultural norms that are simultaneously taking place.

1.3 Definition of Key Terms

Some vocabulary is defined here for precision because these terms are central to this project. They are presented alphabetically.

Communications repertoire refers to the breadth of ICT that a person engages with to communicate (Haddon & Vincent, 2005). A user may be choosing between a mobile phone, fixed-line phone, email, or instant messaging, for example, to communicate with friends. All of these technologies would be part of her repertoire. These communications repertoires fit within a broader ecology of ICT that includes technologies that someone does not have access to. The fixed-line phone may be part of the ICT ecology but may not be part of someone’s communications repertoire if he or she does not have access to one.

Cyborg refers generally to human-machine hybrids. In the context of this project, mobile phone users who have closely integrated mobile phone use into their communication patterns are considered cyborg. These users perceive mobile phones almost as part of their body and come to rely on them as a primary method of connecting with loved ones. Cyborg theory was introduced by Haraway (1991) as a way to conceptualize feminist use of technology to construct identities that transcend

Western, male-dominated power structures. Likewise, cyborg use of mobiles creates new ways of being that help people cope with the multiple demands on them, like home, work, or family. This definition is also informed by the work of Clark (2003) who proposes that people are becoming cyborg with everyday technologies like wristwatches and computers. Thus, mobile phone users can be considered cyborg even if not literally embedded with technology. Cyborg theory is described in detail in Chapter 2.

Digitally emergent is a neologism that refers to a region that is still developing pervasive, digital telecommunication and media infrastructure. The term refers to levels of digital development and is an attempt to decouple the description of technology development from politically loaded terms that describe power relationships—but not levels of technology development—like the “Third World” or “peripheral” states, drawn from Wallerstein’s (1974) model of the modern world system. “Modernizing” comes closest to the general meaning of digitally emergent by implying economic change and industrialization. However, modernization also implies Westernization (von Laue, 1987), which may not be a true representation of the changes occurring, and a shift away from traditional values, which may not be occurring. “Developing country” is often used to describe some digitally emergent places, but such a broad term is problematic because it can describe a huge swathe of countries from Kenya to Turkey and may be based on any number of factors such as gross national product (World Bank, 2006) or life expectancy and water supply (United Nations Development Programme, 2006).

Hybrid in this dissertation is used to refer to mixed cultures. As noted by Kraidy (2005), the term is fashionable for describing all kinds of multi-cultural contexts at the risk of becoming meaningless. However, it still offers much promise as a rich theoretical frame, drawing from post-colonialism and globalization theories. “Hybrid” when applied to cultural spaces can refer to cosmopolitan intersections where different types of people come together (Appadurai, 1996), a place for cultural blending such as the borderlands (Anzaldúa, 1999), or a literal sexual blending between diverse cultures (Young, 1995). The value of this term for this project is that it reflects culturally mixed spaces, people, and technology use. Further, this term reflects a new way to look at the world that allows for the “global cultural flows” that are creating new ethnoscapes, mediascapes, and technoscapes—a more accurate way to examine the world as national boundaries fade and new kinds of affinity groups appear (Appadurai, 1996). The theory of hybridity is unpacked in more detail in Chapter 2.

Middle class is difficult to define and undoubtedly is inextricably linked with other classifications based on ethnicity, gender, or education. Loosely, the term refers to socioeconomic status, social mobility, and Marxist notions of power in production. Jobs that are often considered markers of middle class status include clerical workers, technical and professional workers, managers, and self-employed business people (Social class, 2006). The middle class is often discussed in the context of India, which is experiencing tremendous economic growth. There, non-manual labor is a significant marker of being middle class, especially since the country as a whole is

still largely agrarian (Sridharan, 2004). In India, class is symbolic and, even more than income or job title, it may be tied with commodity consumption patterns (Fernandes, 2000; Dickey, 2000). Depending on the types of professionals who are included in a definition of “middle class,” such as those who have currently prestigious jobs in the IT sector and multi-national companies or those who have previously desirable, stable jobs with government institutions, the Indian middle class may range in size between 55 and 250 million people (Sridharan, 2004). For the purposes of this project, middle-class members are considered upwardly mobile people with income sufficient for discretionary spending on technology.

Mobile hybridity is the new theory proposed by this dissertation. The results of the studies in Tashkent and Bangalore are filtered through the theoretical lens of hybridity, cyborg theory, and empirical studies of mobile phone use and suggest that mobile phones are crucial tools for negotiating the ever shifting cultural landscape of hybrid spaces. The theory suggests both that hybrid identities are fluid and mobile and that mobile phones can be used to support hybrid identities. Chapter 5 further articulates this theory of mobile hybridity.

Mobile phone is defined as any wireless device that permits interpersonal communication at any time in virtually any urban location. These include basic handsets, smart phones, Blackberries, and PDA phones.

Mobile phone use includes verbal and textual uses of phone functions such as voice communication, texting, mobile Web, and download. It also includes nonverbal

uses of the mobile phone (Wei, 2006) such as decoration and use of it as a fashion accessory, intentional missed calls, or the symbolic meanings that a mobile may hold for its user. Mobile phone use that supports personal or romantic relationships includes activities that are performed for the maintenance of the relationship. Activities include calling a friend or romantic partner for instrumental purposes such as scheduling a get-together, exchanging news or sentiments. Activities may also be non-instrumental such as maintaining social connections through the use of “beeping” or intentional missed calls in Rwanda to indicate nonverbally that someone is being thought of (Donner, 2005c) or sending “meaningless” SMS in Norway simply to maintain contact with someone (Johnsen, 2003).

Perpetual contact refers to the constant connection that people have to their social networks through an ecology of face-to-face and mediated communication technologies including the mobile phone. Perpetual contact is used as a cover term that combines the multiple meanings of “absent presence” (Gergen, 2002), “connected presence” (Licoppe, 2004), and “perpetual contact” (Katz & Aakhus, 2002) which speak to ready access to social networks, occupation of a shared “inside space” in a mobile call, and closeness to others regardless of physical distance. This term is further discussed in 2.4.2 Supporting Personal Relationships with Mobile Phones.

Personal relationships are used in this project to mean social relationships between friends and family. In the context of this project, personal relationships that

require interpersonal communication (Walther, 1996), either verbal or nonverbal, are of most interest.

Post-colonial is defined in this context as a setting that has become independent from a former colonizer. The term also implicitly carries with it questions of national identity formation, self-identity, hybridity, and power (Said, 1979; Ashcroft, Griffiths, & Tiffin, 1995). This term is discussed in greater depth in Chapter 2.

Romantic relationships are defined in this project as a steady date, engagement, or marriage. The precursors to a romantic relationship are also considered a key component of the process. Being “single and ready to mingle” and courting a potential partner are important stages in the formation of romantic relationships. Romantic relationships were chosen as a model type of personal relationship to study in India because they are set within a structured framework of highly formalized rituals and customs and social values (Goodwin, 1999), especially as the relationship moves towards marriage. One of the component steps in the formation of romantic relationships is courtship, which includes “dating,” or the Western practice of seeing someone in a romantic relationship before marriage and not necessarily with a view to marriage. Dating includes arranging meetings, doing activities together, and having a close relationship. Courtship also consists of activities related to attracting a potential partner such as “lekking,” a term drawn from animal behavior, that refers to competitive display for the purpose of mating, such as a peacock’s spreading of its tail feathers (Lycett & Dunbar, 2000). The term

“romantic” has emotional and imaginative appeal, but for the purpose of this project, it refers to the outward markers of an intimate relationship rather than more spiritual or metaphysical connections.

Traditional refers to cultural traditions, or behaviors and attitudes that are culturally inherited. These are customs that previous generations have engaged in such as arranged marriages in India or Uzbekistan. These institutions may be considered socially conservative by some, but traditional is not intended to be a judgment, i.e., it does not suggest outdated or backward, but rather it acknowledges the genealogy of some behaviors.

Young is defined as between ages 18 and 30. The project is restricted to this age range when considering mobile phone support for romantic relationships because it is a common period for dating, courtship, and seeking marriage partners. Members of this age group are also young enough that their parents are likely still to be influential in their personal lives and decision-making about romantic relationships. Thus, potential tensions between parental expectations and children’s wishes might be observed.

1.4 Scope and Limitations

This project considers primarily mobile phone use. As such, it does not deeply probe into the use of other important communication technologies like the fixed-line telephone, chat, instant messaging, email, or social networking sites, which may be significant players in some participants’ communications repertoires. Although

mobile phone use clearly exists within a broader ecology of ICT, these other technologies are lightly described in this project primarily to provide context and to minimize fetishism of the mobile phone, that is, acknowledging that the mobile is not the only communication method a person might use, even if it is a preferred tool. The exclusion of other ICT in such a project is not unusual given the number of studies that focus chiefly on mobile use while looking at broader contexts of available technologies, communication, and social exchange, e.g., Taylor and Harper's study (2003) of English teenagers, Lemish and Cohen's study (2005) of Israeli men and women, or Palen, Salzman, and Young's study (2001) of new users of mobile phones.

The other caveat to this project is that the results are extensible to the urban elite in Uzbekistan and India rather than to their populations at large. The two study sites and the study participants are not "typical" for their countries. Tashkent, as the capital of Uzbekistan, is significantly more developed than the rest of the country. Its high-rises and readily available internet cafes contrast sharply with the rest of Uzbekistan, a country that is primarily agrarian (Spyridakis, Wei, & Kolko, 2003; Wei & Kolko, 2005b). On a similar scale of disparity, Bangalore is known as the Silicon Valley of South Asia, whereas much of the rest of India is still developing the underpinnings of economic infrastructure such as water, electricity, and transportation.

The participants who were included in these two studies are also exceptional. The Tashkent volunteers were middle-class and could afford education at a private institute, or they held well-paying jobs with a multi-national company or a foreign NGO. This level of privilege contrasts sharply with the typical monthly salary that is

often cited at \$20 or \$30 USD (Kolko, Wei, & Spyridakis, 2003). The participants in Bangalore were high-tech or skilled workers, whereas less than 40 percent of Indians are literate (Education, 2006) and the remainder exhibit various levels of “non-literacy” (Chipchase, 2005). Even though these study participants are unusual for their countries, they are highly representative of early mobile users who are likely to be financially or educationally well off. For that reason, such users are good representatives of the emerging markets ready to buy new goods and services.

1.5 Significance of the Project

Studying how mobile technology is used to support personal and romantic relationships in digitally emergent locations like Tashkent and Bangalore offers the chance to examine in a richer way the impact of mobile device use on society in general. Many of the existing mobile studies describe an emerging mobile culture, perhaps because the mobile culture that is described seems so novel. They capture a broad sense of how people interact with their mobiles, such as the near seamless integration of the devices into the social lives of teens (Grinter & Eldridge, 2001; Ling & Yttri, 2002; Kasesniemi & Rautiainen, 2002; Taylor & Harper, 2003; Johnsen, 2003; Ito & Okabe, 2003; Oksman & Turtiainen, 2004). However, when such studies of mobile phone use are conducted in regions that are not yet overly saturated with technology, interesting juxtapositions are made between relatively new technology and older cultural traditions. The resulting questions that are posed offer opportunities for a deeper exploration of how mobile phone use interacts with traditional values in the shifting cultural and technological landscape of growing cities like Tashkent or

Bangalore. Answers to such questions could then be used to consider how mobile phone devices can be designed to be more culturally meaningful—a richer design goal than trying to cram more features into a smaller form factor.

Further, a research project in post-colonial environments can help us better understand the new “hybrid” cultures emerging worldwide, not only in the research sites of Tashkent and Bangalore but also in a variety of cosmopolitan spaces and borderlands. The flexibility and freedom represented by mobile phones in many ways symbolize the shifting world landscape, what Appadurai (1996) describes as a global cultural flow. Fixed nation-states and discrete ethnic groups are no longer a relevant way to look at the world where globalization has spread universally appealing Hollywood films, cultures are blending together through close contact, technology links many communities together, and ethnic diasporas share a “national” identity even with those who are dispersed globally. Studying how personal and romantic relationships are supported in such hybrid, mutable environments can lend some valuable insight on how people who are neither one category nor another, but rather a mix, use mobile phones. With the advent of globalization and closer connections between various societies and economies, agile, blended cultural environments and people who are also culturally hybrid are becoming much more common.

The study of romantic relationships in particular is especially promising as it can focus a lens on the emotionally compelling aspects of mobile phones. Given the range of communication tools that is available, choosing to use the mobile to call a loved one or send a text message suggests that the mobile phone has unique qualities

like its constant presence or discreetness that are attractive for connecting with special people. Capturing these qualities of the mobile phone can help enhance design so that mobile devices can be more compelling and satisfying to use, in addition to specifically supporting romantic relationships.

Chapter 2: Theoretical Framework and Literature Review

This project is theoretically framed by “hybridity,” a concept that has roots in post-colonial studies and globalization. In this project, hybridity is an umbrella term that refers to liminal spaces, cosmopolitan worlds (Appadurai, 1996), and borderlands (Anzaldúa, 1999). The term is also a way to understand the people who occupy such spaces and the synthetic blending of elements of their identity and behavior that occurs as multiple cultures come into contact and influence them. This concept of hybridity is a useful lens for examining the digitally emergent, post-colonial research space, the people who occupy such spaces, as well as the way they use the mobile phone. Hybridity also creates an avenue into a discussion of cyborg theory, a body of work that concerns the close integration of people with the technology that fills their daily lives. Although cyborg brings to mind science-fiction and embedding the human body with technology, in this project, the term more broadly refers to how users seamlessly assimilate tools into their routine habits to construct their identity in complex circumstances, a concept framed by Haraway (1991) to describe feminist constructions of identity and also adopted by Hayles (1999) to characterize “post-human” embodied communication.

This chapter lays out the theoretical groundwork for this project and discusses the primary theory of hybridity as well as the related sub-theory of cyborgs. Then empirical research on computer-mediated communication and mobile phone use is reviewed in order to illustrate how mobile phone use is both similar to and distinctive

from computer-based technologies. These studies of computer use show how people form relationships online and how cultural identity is expressed over computers—concepts that can be extended to the mobile phone arena. The computer-mediated communication literature is also included because computer use is reported in the Tashkent and Bangalore studies. The literature about mobile phones is then presented to show the theories of mobile technology use that inform this project and to create a theoretical space for discussing the two studies.

This chapter reframes the phenomena of mobile phone use, such as the entanglement of private and public spheres, the softening of borders between self and machine and between self and others, and the expression of cultural identity, with hybridity and cyborg theory. This approach creates the theoretical framework that supports this dissertation's articulation of the theory of mobile hybridity, or how mobile phone users negotiate their fluid cultural spaces.

2.1 Hybridity

Hybridity is an important concept in the study of transcultural relations. The historical events of colonialism, the flows of immigration, and the more modern experience of globalization can be credited with much of the close contact of cultures and influences from other worlds that encourage hybridity. This section shows the theoretical effect of multiple cultures coming into contact in a space. As cultures blend and tangle with one another, the boundaries of cultural traditions and modern habits become blurred, creating opportunities for citizens of these spaces to construct new, blended identities that they feel are better suited for navigating the shifting

cultural landscape of the globalizing urban space. This construction of new identities is a cornerstone of mobile hybridity.

Although hybridity has been adopted for so many arguments supporting multiculturalism and diversity that it threatens to be too broad in meaning to be theoretically productive (a debate also acknowledged by Kraidy, 2005), this project counters that weakness by adopting Kraidy's (2005) stance of considering hybridity in specific, historicized contexts. In that way, hybridity can be a powerful lens to understand the effects of globalization on communication and media practices within a particular setting. Thus, this section's discussion is grounded in historical phenomena such as colonialism. And subsequent chapters about Tashkent and Bangalore discuss the specific historical and cultural contexts of those places that inform the application of the theoretical lens of hybridity.

This section describes the key ideas about hybridity. In the process of discussing and defining hybridity, related theories from post-colonialism and globalization are discussed because they make hybridity relevant to the digitally emergent, post-colonial spaces that this project studies. The implications of cultural hybridization for this project about mobile phone use are then discussed.

2.1.1 Theoretical Origins of Hybridity

In the biological world, hybrids are the offspring of plants or animals of different varieties or species; they can be as tame as hybrid tea roses or as fantastic as ligers, the enormous lion-tiger crosses. In the context of this project, hybridity

connotes cultural mixture, or the product of cultures brought together face-to-face or through mediated forms such as film, music, or consumer goods. These moments of contact originate from the movement of populations and cultures around the world through colonization, immigration, or globalization. In the mid-19th century at the height of colonization, the mixed-race progeny of unions between colonizer (European) and colonized (non-European) prompted scientific discussion and heated debate about race and culture.

These old arguments about miscegenation and the purity of race have gone the way of eugenics, but Young (1995) argues that this historical debate can create a space for renewed conversation about race and culture. Namely, there is no such thing as pure culture; rather, it is constructed by gradual changes and influences. Even Englishness, which colonists wished to preserve, was never a homogenous thing. In a colonial setting, culture is caught between poles and is defined and re-defined in a dialectical process:

In the different theoretical positions woven out of this intercourse, the races and their intermixture circulate around an ambivalent axis of desire and aversion: a structure of attraction, where people and cultures intermix and merge, transforming themselves as a result, and a structure of repulsion, where the different elements remain distinct and are set against each other dialogically. The idea of race here shows itself to be profoundly dialectical: it only works when defined against potential intermixture, which also threatens to undo its calculations altogether. This antagonistic structure acts out the tensions of a conflictual culture which defines itself through racial ideologies. (Young, 1995, p. 19)

Here, Young argues that race is not an essential quality; it is constructed by the forces that entwine co-existing cultures in colonial space. Race defines itself by articulating

and comparing itself with what it is not. This dialectic suggests that two (or more) disparate races compare themselves against a potential hybridization. Likewise, this relationship might be reflexive where the hybrid mixture defines itself by comparing it against the parts that it is made of. For the purposes of this project, Young's definition of race is extended to culture. The implication is that any cultural hybrid is conscious of its forbears, in essence, aware that it is a blend of two potentially dichotomous elements. Citizens in traditional spaces who are interacting with global media messages and fashionable personal technology may acknowledge that they are uniquely occupying a liminal space: they may feel they have a wider view of the world than a "simple villager" yet also be uncomfortable fully embracing a global culture that does not acknowledge the cultural values that they come from.

Theoretical work on hybridity is based on post-colonial studies, which examine the effects of colonization on culture. A classical definition of colonization is provided by Said (1979), who identified colonizers as countries of the West such as Britain, France, and the U.S., and the colonized as countries of the "Orient." Contemporary post-colonial studies have also been extended to other varieties of power discrepancies, such as the rights of indigenous minorities or subjugation by non-Western societies. Post-colonialism incorporates marginalized populations into theoretical frameworks, considers how people become excluded from dominant discourse, and examines how dominant and subordinate cultures in a location influence each other. In the context of this project, post-colonialism shows how citizens of Uzbekistan and India have historical habits of simultaneously resisting and

absorbing foreign influences, ranging from colonizers' language to technology. Such post-colonial critique offers a nuanced, empowered view of the process of technology diffusion that differs from one of Asian consumers mindlessly consuming the products offered by Western companies—in essence repeating old patterns of colonization. Rather, it can be seen that Asian consumers are purposefully adopting and integrating products such as the mobile phone into their communication routines to satisfy their personal needs rather than some foreign corporate agenda.

Post-colonialism also lends itself to this project in the work of the Subaltern Studies Group, a loosely connected group of Indian and British scholars in England originating in the 1970s that considers society, culture, and history “from below” and particularly thinks about the subaltern masses rather than the elites (Chaturvedi, 2000; Ludden, 2002). “Subaltern” was used by Antonio Gramsci to include peasants, vassals, and all subordinate and inferior classes; this definition can be further extended to subordinate castes, genders, ages, languages, and cultures. The original context of subaltern studies was South Asian and Indian history, but its principles and theories have been adopted in other fields such as literature, political science, anthropology, and sociology, and for other parts of the world such as Latin America and Africa. This diverse application of the Subaltern Study Group's work suggests its utility for including previously marginalized perspectives and imparting agency to subaltern actors, rather than considering them a “dumb mass” of people who are pushed around as convenient by elite groups. In this way, it is possible to interpret

post-colonial users of mobile technology making purposeful decisions about their technology consumption rather than using something “just because” it is available.

Although post-colonial work attempts to be inclusive of subaltern voices, it has also been criticized for the binaries first framed by Said (1979) that present the world in polar terms like colonizer and colonized, oppressed and elite, or Orient and Occident. Some of the Subaltern Studies Group have countered the problems of binaries with more complex categories; for example, Guha (1988) interpreted Indian nationalism as one of heterogeneous action by both Indian bourgeoisie and Indian subaltern rather than a singular Indian group. This project’s use of hybridity serves to overcome the limitations of binaries, by focusing on the connections and liminal spaces that exist between poles rather than considering only the poles themselves. Liminality and hybridity were explained by Bhabha (1994) with the metaphor of the stairwell, a symbol of connection between disparate cultures and one that subverts the implicit power hierarchy that is based on the dialectical relationship of self and other:

The stairwell as liminal space, in-between the designations of identity, becomes the process of symbolic interaction, the connective tissue that constructs the difference between upper and lower, black and white. The hither and thither of the stairwell, the temporal movement and passage that it allows, prevents identities at either end of it from settling into primordial polarities. This interstitial passage between fixed identifications opens up the possibility of a cultural hybridity that entertains difference without an assumed or imposed hierarchy...
(Bhabha, 1994, p. 4)

Bhabha suggests that the worlds of the colonizer and colonized are connected, yet they are not smoothly blended and integrated. The contributions of each culture are still visible, and it is the differences between cultures that are most meaningful.

Like Young (1995), Bhabha picks up on cultural mixture as the crucial space that the polar cultures react to and interact in. In this dissertation, this stairwell or liminal space is key for understanding how mobile phone users create a new “third space” (Bhabha, 1994) for their identity, one that prevents them from having to choose between an identity that is a “primordial polarity,” be it traditional or modern, local or global, or dutiful child or independent adult. Mobile phone users do not have to define themselves by choosing A or B as identities; rather, they can see themselves as somewhere in-between A or B, or a mix.

As mentioned earlier, post-colonialism is relevant to a broader context than interactions of colonizer and colonized. It can be applied to any interaction of diverse cultures, especially where a power hierarchy may be present, such as immigrant communities or those with strong exposure to other cultures through the media. These communities that are situated in two or more worlds are aware of their unique positions as mixed people but still want to label and categorize themselves as something more unique than bilingual or multicultural. Among the Japanese, the word *chanpon* (mixture) describes the syncretism of Japanese and English language and culture, which signals the skillful, simultaneous navigation of multiple cultural identities. Other communities have also come up with their own labels for mixed identities and culture like Spanglish (code-switching between Spanish and English) or ABCD (American Born Confused Desi). What this signals is a desire to be fixed in place even while celebrating these communities’ occupation of a liminal, transitional space.

Anzaldúa, herself an occupant of the borderlands of the U.S. and Mexico, noted that:

Borders are set up to define the places that are safe and unsafe, to distinguish *us* from *them*. A border is a dividing line, a narrow strip along a steep edge. A borderland is a vague and undetermined place created by the emotional residue of an unnatural boundary. It is in a constant state of transition. (Anzaldúa, 1999, p. 25)

Anzaldúa called the border a “Third Country” and a “Closed Country,” highlighting its uniqueness as a cultural space and acknowledging it as a legitimate space rather than a something that is only in-between. The border in Anzaldúa’s work represents the physical space between Mexico and the U.S., which is culturally mixed for historical and socio-economic reasons. The southwestern part of the United States was historically part of Mexico. In its neo-colonialism, the U.S. encroaches on Mexico with its economy, factories, and NAFTA, and Mexicans emigrate (sometimes illegally) to the U.S. for work opportunities.

Anzaldúa’s borderlands are occupied by *mestizos*, hybrid people who are American, non-Western, and multiple in identity. Her theorizing included lesbianism as well as the *indigena* (Indian), which are both forms of resistance and attacks on traditional power structures, just as the *mestizo* is an act of resistance against the separate pulls of Anglo and Mexican cultures. In these borderlands can be found the New Mestiza Consciousness, where Spanish is used as easily as English. The example of the New Mestiza resonates with this project in that it is a new identity in the midst of multiple cultural influences. This creation of a new identity is necessary to smoothly enter and exit the multiple spaces that one occupies, which may entail

literal crossing of geographic boundaries as well as more subtle cultural boundaries. Similarly, mobile phone users create new identities for themselves to fit in multiple cultural spaces.

The borderlands of U.S.-Mexico are only one of the many shifting liminal spaces to be found. The immigration and cross-traffic engendered by globalization has prompted Appadurai (1996) to suggest that the world landscape is shifting beyond nation-states and discrete groups. The constant ebb and flow of people, money, ideas, media, and technology have rendered cultural analysis of discrete groups rather meaningless. Appadurai expands Benedict Anderson's (1991) "imagined communities," or the construction of nations with national print media, to "imagined worlds" that are constructed by media, ethnicity, and self-imagination which better lend themselves to an analysis of today's "global cultural flows." Appadurai names these loosely moving flows "-scapes" (ethnoscapes, mediascapes, technoscapes, financescapes, and ideoscapes), which are creating a new modernity at large that is not fixed, stationary, or discrete.

The global cultural flows help to capture how workers in international companies might be part of multiple "scapes," for example, producing value in a financescape, participating in a networked technoscape, and consuming the products of a mediascape. Taken together, these flows create a new "cosmopolitanism," a word that connotes transnationalism and transculturalism, and something that is beyond normal institutions. Further contributing to this notion of a mutable modernity is the deterritorialization of many groups, such as Filipino overseas workers, who are now

linked to a diaspora that supersedes geographic boundaries for representing Filipino culture to them. Cosmopolitanism provides support for “global citizenship” where people may feel they are part of something larger than a singular nation, and try to situate themselves within a broad context, perhaps constructing their identity in comparing themselves with messages carried by the “scapes,” much as races or cultures define themselves in comparison with hybrids. For example, many overseas Chinese label themselves *huaqiao* (“emigrant Chinese”), defining themselves as “ethnic Chinese outside of China”—even if they have lived several generations in Vietnam, Malaysia, or the U.S. They have defined themselves by something that was left behind (even if symbolic) rather than by the geographic borders that they currently live in.

However, it should also be emphasized in this new cosmopolitan and international world, that nation and power still matter, and claims of “internationality” should be carefully examined. Transnational companies are heavily embedded in their dominant, home culture, and often, these corporations do not represent the national interests of their home countries. Miyoshi (1996) observes that these transnational companies represent only their corporate interests, are not controlled by a nation-state, and do not have the same social obligations or agenda as governments. Likewise, cultural studies critic Hall (1997) has highlighted some of the risks of global mass culture: it is not a pure *mélange* of cultural products from around the world. Instead, it is very much centered in the West, especially the U.S., with Western technology and concentration of capital. It is a culture that speaks English

and seeks to absorb cultural differences. Rather than trying to create clones of American-ness around the world, globalization tries to leave behind homogenized particularities wherever it has been. The absorption of this difference and its eventual loss to world history distinguishes globalization from other kinds of capitalism and colonization.

Featherstone (1996) echoes Hall by agreeing that globalization is more complicated than a simple erasure of local cultures. The external cultural pressures faced by a group may even appear to unify it superficially, by creating an oversimplified image of the local community to outsiders. However, the conflict between local and global identities is more complex than a single moment of contact. There are other layers of practices and cultures that are present besides local and nation-state cultures, such as the “third cultures” of global media messages or purposefully created transnational organizations such as the EU. Featherstone finds that the contact between two (or more) cultures allows for the creation of third spaces and localized versions of the global culture.

These third spaces created by globalization echo the hybrids and liminal spaces discussed in post-colonialism. They offer a place for people to absorb and integrate the multiple signals they may receive from their local culture or a colonizing culture or global messages. In fact, third spaces can be a testing ground to closely examine the disjunctures and successful adaptations that occur when a local culture comes into contact with homogenizing global forces like Hollywood movies or even a symbol of globalization, such as the mobile phone with the power it confers on users

to wander from family, the local, and the familiar. As described by Bhabha (1994) these third spaces are “discursive sites or conditions that ensure that the meaning and symbols of culture have no primordial unity or fixity” (p. 37) and can constantly shift and evolve. For people who are in the confluence of multiple cultural flows, the third space is an ideal place to construct new identities that suit a changing environment full of multiple, sometimes contradictory, messages.

This theoretical literature about hybridity offers several themes that are relevant to this project. First, the mixing and mingling of cultures create opportunities for resistance and integration of new influences. The results of these interactions in liminal or third spaces are people who are fluid, cultural hybrids. They represent a new culture in its own right, as well as one that is in-between other cultures. Second, these cultural hybrids are rooted in particularities. Whether they are the result of contact between colonizer and colonized or the local and global, they bear evidence of their roots. People who become hybrid often do so in an attempt to reconcile disparate cultural forces, and they are constantly negotiating their position. Third, these hybrids define themselves by comparing themselves with the cultures that they comprise, in that way further refining their identity. And finally, these themes of hybridity are relevant on a national and international scale. Given the ease of movement of people and technology across borders, the globalized and cosmopolitan world supports multiple forms of contact that can spark cultural hybridization.

2.1.2 Theoretical Application of Hybridity

Hybridity is a useful lens in digitally emergent spaces like Uzbekistan and India, which are nexuses of global influences. As a result of colonization, the people and cultural heritage of Britain came to India, and Russia (later the Soviet Union) to Uzbekistan. However, even before colonization, both regions had experienced the confluence of multiple cultures and religions: Uzbekistan is situated on the Silk Road, the crossroads of Asia, with people from Asia and the Middle East eventually settling there. And India has been a cradle of civilization with the major world religions like Hinduism and Buddhism originating there. Both countries have several distinct indigenous populations with different linguistic and cultural backgrounds, and many individuals who are multilingual and multicultural.

With the advent of global economies (particularly in India, but with some exporting/importing also occurring in Uzbekistan), cultural and consumer goods from international sources are widely available, at least in the cities. These goods are most available to the urban, and middle- and upper-classes; the rural and poor have less exposure and less opportunity to consume these goods. It is these urban dwellers with disposable income who are particularly becoming hybrid, trying on these new identities that are at least partially shaped by consumer goods. Further, with this globalization, the “modern” and the “traditional” come into contact with each other, forcing comparisons, but also resulting in moments of fusion like Coca-Cola enjoyed with an otherwise traditional meal, or a woman wearing a sari working for a high-tech firm.

The kind of cultural hybridity that is engaged in this project concerns identity, cultural values, and other intangible changes that are centered on technology use, especially mobile phones. Sometimes the result of multiple cultures mixing together can be quite literal, such as multilingual alphabet labeling on a phone keypad. But often these changes are more subtle, such as a person caring for his family—not by living with them and caring for them in person—but by working in a different city to earn money, and expressing his love and concern with regular calls home. Many of these hybrid cultural behaviors cannot be neatly attributed to mobile phone use because they are part of a non-static landscape of change and evolution that every society undergoes. What this project aims to do is to identify patterns of technology use that reflect cultural fusions rather than to credit technology as the agent of change.

Hybridity is especially relevant for studying mobile phone use. Mobile phones are flexible tools that can be used to construct new identities and ways of being. Mobile communication allows users to be in multiple places at once such as physically in one location and mentally with the person they are calling. In 2.4.4 Hybridity and Mobile Phones, several studies are reviewed that show how mobile phone use can create new moments of hybridity, for example, by blurring the boundaries of home and work (Gant & Kiesler, 2001) or reinforcing traditional notions of empathy in Korea even when global conditions threaten to weaken social networks (Yoon, 2006). This flexibility of the mobile phone is crucial for this project as the theory of mobile hybridity is articulated, where mobile phones aid users in their occupation of a third space and reconciliation and integration of several cultural

influences. Mobile phone use can express hybrid identities and help users negotiate liminal spaces.

2.2 Cyborg Theory

Cyborg theory is presented here as a subset of hybridity in that cyborgs are a human-machine hybrid. But cyborg theory is based on its own traditions and body of literature, one that draws from postmodern feminism and technology studies. Cyborg theory lends itself as a new critical lens on mobile phone use in that it shows that the technology is not just an object: rather, mobile phones are so synthesized by users that they engender a paradigm shift, where mobiles are a seamless, natural part of existence rather than an accessory device. This absorption of mobile phones enables users to engage in mobile hybridity.

In this section, some principal ideas about cyborgs are described. In outlining these concepts, this chapter takes a small detour into a related theory, the social shaping of technology. A discussion of the body and technology frames the theoretical origins of cyborgs, especially about the blurring lines between human and technology. Then the utility of cyborgs for thinking about mobile phone use is discussed particularly in relation to patterns of technology use and how users integrate the technology into their everyday lives.

2.2.1 Theoretical Origins of Cyborgs

The popular conception of cyborgs is drawn from science fiction and Hollywood: human and machine melded together into a powerful unit. The fantasy versions of cyborgs look highly technological (e.g., the Borg in the *Star Trek* series)

or more or less human but with super-human abilities (e.g., the Six Million Dollar Man and the Bionic Woman). These stories of part-humans, part-machines are not so far-fetched given that the elderly, sick, and injured are becoming cyborg with their pacemakers, artificial knee replacements, and surgically implanted metal rods and plates.

Technology is at the core of the story of cyborgs, but this project engages a mundane version of cyborgs. The kinds of cyborgs that are featured here are normal people going about their business with tools and technology available to the average consumer. The “natural-born cyborgs” described by Clark (2003) smoothly integrate everyday technologies into their lives. The tools that change lives and ways of thinking are of particular interest. An example offered by Clark is wristwatches. Because of the customary presence of the device, wristwatch wearers usually say they know the time when asked, even before they have checked their watch. The awareness that the wristwatch is available is enough for users to incorporate the information it provides as something within their domain of ready knowledge. Technologies like wristwatches may not actually be embedded or melded with the body in the physical sense, but they nonetheless change the way people act. In many cases, people cannot imagine life without certain technologies like eyeglasses or clocks.

Cyborg theory was first framed by Haraway (1991). At the heart of her work is the idea that technology can be a part of nature: humans can absorb and naturalize technology in a process of constructing and re-constructing their bodies. The idea is

rooted in the feminist theory that people can use technology to design who they are in a literal and physical sense to better fit the lives they want to lead, unrestricted by existing categories of gender, race, or class. Haraway's vision, however, is not techno-utopian where technology is an unproblematic aid for life. Instead, she hopes cyborgs are an entry point for people to acknowledge the interconnectedness of their existence with animal and machine and not to be afraid of "permanently partial identities and contradictory standpoints" (p. 154). In other words, rather than running away from problematic identities and viewing them as "fractured" or somehow flawed, they can be embraced as a new identity, like the hybrid, third space described earlier. This cyborg construction of identity is a central argument in the Bangalore study in Chapter 4.

Haraway sees cyborgs as a way to overcome the dichotomies that fill our life, much like the binaries proposed by Said (1979). Because cyborgs are constructed, they can transcend the dualisms that frame the human world like "mind and body, animal and human, organism and machine, public and private, nature and culture, men and women, primitive and civilized" (p. 163). With cyborgs, it is possible to bleed the boundaries that lie between human/animal, human/machine, and physical/nonphysical. Cyborgs are full of possibility because they are so malleable: they are "ether." Cyborgs are about "transgressed boundaries, potent fusions, and dangerous possibilities which progressive people might explore as one part of needed political work" (p. 154). There is no essential identity of gender, race, and class, only "strategic" identities. The example that Haraway offers is women who are not bound

by female identity: they might instead self-identify as “women of color.” People are free to choose affinity groups and are not restricted to a singular identity. This selective construction of identity runs in parallel with the choices that users make about the technologies that they surround themselves with. Cyborgs support metaphorical rebirth and regeneration to create new identities that better accommodate the realities that people occupy. Cyborgs allow people to explore alternative ways of being that may be imperfect but that incorporate several dimensions instead of one.

A branch of theory that complements cyborg theory is the “social shaping of technology,” which argues that technology is not something that springs up and grows on its own; rather, society shapes its development (MacKenzie & Wajcman, 1999). According to MacKenzie and Wajcman (1999), technology is engaged in reciprocal relationships with multiple forces including science, technological systems, economics, government institutions, gender, and race. This position counters that of technological determinism, which treats technology almost as something independent of people that is injected into society by some outside source. In the technological determinist model, technological change inevitably happens and affects society, seemingly without human input. Although technologies clearly impact society (take, for example, handguns or immunizations), humans affect this impact with their design decisions.

Socially shaped technologies are not value-free but imbued with politics (Winner, 1999). The example offered by Winner is that of overpasses in Long Island,

New York, that had been built in the early half of the 20th century with very low overhead clearance. The overhead was too low to permit buses, so the bridges excluded people who did not take cars, e.g., poor black people, effectively making Long Island a zone for the wealthy and white. In retrospect, bridge designs may not have carried a purposeful political agenda and may have been an unintentional reflection of the cultural biases of the designer, but nonetheless, the design has had a longstanding impact on the infrastructure of Long Island, making it difficult to implement mass transit.

Film photography, a seemingly neutral technology, is also culturally shaped. An analysis by Dyer (1999) shows how technologies might reflect cultural values as well as reinforce them. He writes about the development of photographic film which is optimized to make “white” skin look the most pleasing, to the detriment of darker skin colors, simultaneously reflecting and constituting what is considered standard skin color. Film has been optimized to look best with “white” skin because “white” people were the norm, and in turn, the “pleasing” look of “white” faces on film has helped define what is attractive.

The social shaping of technology shows how cultural values influence the design of technology, and how the cultural values expressed through the technology affect society. It suggests people and technology occupy a holistic system where the two interdependently influence one another. Similarly, cyborg theory also suggests how people live in a web with tools and information technology, where people absorb technology to create new bodies, identities, and possibilities; this action subsequently

infuses the technology with new meanings, such as an opportunity to transform traditional notions of gender. This project leans on cyborg literature because of its interest in how people adopt and integrate technology to re-design their identities to cope with the constant shifting of hybrid spaces. Further, cyborg theory can push the boundaries of other contested spaces, such as the physical body, that digital and networked technology supposedly makes irrelevant.

Communication and thinking, though, become further embodied acts in the digital era, a position that Hayles (1999) explores through the “post-human.” In her work, thinking is a cognitive function that depends on the embodied form enacting it, and the mind cannot be separated from the body. Prostheses, such as computers, extend the process of creating a body that began when we were born, in a seamless articulation of humans with intelligent machines. In the world of the post-human, consciousness is only part of the story: thoughts depend on the medium or body that is expressing them. The body very much informs the perspective or opinion that is expressed—a view that echoes the arguments of feminism and post-colonialism.

For Hayles, material and information co-exist together. Information technology does not create a space free of the body and the politics that it entails. Hayles’ focus of interest in the post-human is “not on the separation of matter and information but on their inextricably complex compoundings and entwinings” (p. 23), extrapolating from Shannon’s information theory that signal and message depend on each other and co-exist together, where signal is a conveyer of meaning, and message is the semantic content. Such a view can inform analysis of technology mediated

communication by privileging the context of communication as much as the message itself. In other words, the context or body of communication is as important as the information itself.

Hayles' post-human creates opportunities for subverting existing hierarchies and categorizations, like the hybrid third space. Hayles makes a play on the Lacanian "floating signifier" (which is something vague that could mean nothing, anything, or everything), declaring a "flickering signifier" that metamorphoses and disperses in surprising and unexpected ways. The flickering signifier is a way to think about information as pattern and randomness rather than only presence and absence of signal. Like the pairings of signal and message, and material and information, the flickering signifier allows scholars to consider several aspects of information, even if they are messy and non-conforming to binary expectations. Pattern and randomness, on the other hand, does not assume moving towards a known end but allows for an open future that has contingency and unpredictability. In fact, randomness may be considered a plenitude, something that launches new concepts and technologies. Within this space, people use machines to think, create new meanings, and extend themselves. The post-human can help explain why mobile technology might be a fertile ground for creating new identities even if they do not appear at first to fit neatly into an existing, binary model.

As thinking and communication can be extended by technology, so can identity. Stone's (1995) work considers technological devices as prosthetics that extend oneself and support play or "virtual" performance, where the relationship

between self/body and individual/group is changing. Stone's research site is cyberspace, and she challenges the *Neuromancer* vision of cyberspace as a "physically inhabitable, electronically generated alternate reality" (p. 34) where people are directly linked in via the brain. In that world, the original body is the authenticating source for the cyberspace version of the person because everyone has a body in normal space.

Her recontextualization of cyberspace allows for new kinds of identities that are "fragmented, complex, diffracted through the lenses of technology, culture, and new technocultural formations" (p. 36) because of complex interactions between humans and machines, and they are

for better or worse, more visible as the critters we ourselves are in process of becoming, here at the close of the mechanical age. I see these identities engaged in a wonderful and awesome struggle, straining to make meaning and to make sense out of the very idea of culture as they know it, swimming for their lives in the powerful currents of high technology, power structures, and market forces beyond their imagination. In this struggle I find certain older structures stubbornly trying to reassert themselves in a techno-social milieu that to them seems to have gone berserk. These are the structures of individual caring, love, and perhaps most poignant, of desire. (Stone, 1995, p. 36)

Here, multiple and fractured identities create new possibilities even as they compete with the old collective structures of caring, love, and desire. The "war" between these techno-social constructions and the older structures suggests a recursive, iterative relationship that is "straining to make meaning" out of existing culture—a theme that appears in the Bangalore study. This argument resonates with Haraway's "partial" and "contradictory" identities supported by cyborgs. By opposing and juxtaposing

this new use of technology against older “human” structures, Stone suggests a hybrid or liminal space can exist between two poles: in this case, blending together the mechanical with the human to make a new identity.

These identities supported by technology are multiple and depend on the relationships, whether with self or others, that are mediated through technology. In Stone’s view, online “encounters are about relationships between bodies and personae/selves/subjects, and the multiplicities of connections between them. They are about negotiating realities, and the conjunctions of social spaces and activities bound together by webs of physical and ideological force” (p. 86). In this scenario, technology can mediate and constitute relationships and connect people through complex and intersecting communication networks. It can act as an interface between body and self, allowing people to grow virtual bodies that suit their purpose, whether it is a female body for a man or a bolder personality for a shy person. When extended to mobile phone communication, Stone’s vision could explain how mobiles support people who play different roles in different intimate relationships, such as dutiful child or attentive lover. Through technology, users can construct identities that better fit the different relationships and contexts of their lives.

Thus far, this theoretical literature has focused on the generative, constructive powers of cyborgs. However, the next set of scholars considers how cyborgs can recapitulate traditional patterns even as they evoke a sense of new world promise. Balsamo (1996) explores how the body continues to be constructed as a site of gender. Interpreting Haraway's work, Balsamo feels only cyborg bodies stand a chance in

postmodern culture. But she also argues that identity and the body are rearticulated with new technologies in part to reproduce traditional narratives about gender and race. For example, women use cosmetic surgery to transform themselves, but in ways that conform to Western standards of beauty. In other words, there is no neutral cyborg body; gender is still inscribed on the cyborg body even as technology bolsters it. Similar conclusions were drawn by Dietrich (1997) in her analysis of the representation of women in tech magazines like *Wired*, *Mondo 2000*, and *bOing*, who were still marginalized even in the new online world.

Like gender, questions of political power have also been reinterpreted through cyborg theory. Gabilondo (1995) takes a post-colonial view of cyborgs, situating them in a political, economic, and geographic context, and argues that they are symbolic of the digital divide between the First and Third Worlds. He associates cyborg subjects with multinational capitalism and Western-centered privilege because, for the most part, subalterns are excluded from cyberspace as they are from the global consumer culture because of lack of financial resources. They are unable to develop cyborg consciousnesses. Gabilondo's argument highlights a valid point that access to technology is the first step for subalterns to reap the benefits of cyberspace. This problem is paramount in the research space of this project of digitally emergent societies. Whereas cyborgs have transgressive promise, their power is predicated on existing narratives (e.g., about gender) and access (e.g., by the subaltern). This duality suggests that technology studies can reveal patterns of use that are novel, hybrid, and

that overcome problems of the status quo, as well as those that re-inscribe existing behaviors but in a mediated fashion.

Finally, one last theoretical work on cyborgs is presented, that synthesizes many of the previously stated themes of hybridity and identity construction. Sandoval (1995) argues that post-colonial subjects are uniquely situated to be cyborg. Oppressed subjects have always had the ability to incorporate and cope with difference, making them “cyborg” in behavior long before cyberspace. Sandoval claims “cyborg consciousness” as a way to represent the identity and experiences of oppressed people who must emigrate and work in other cultures in the “robotic conditions” of low-wage labor. Drawing from her “U.S. Third World Feminism” (or a feminism of the oppressed rooted in the U.S.), Sandoval frames the cyborg consciousness as the “technological embodiment of a particular and specific form of oppositional consciousness.” In other words, these Third World subjects are now poised for a cosmopolitan life. Experience with resisting the cultural threats of globalization and facility with multiple identities make these subalterns uniquely equipped to deal with postmodern living in a technologized setting.

Cyborg theory has great promise as a lens for mobile phone use. From this theoretical literature, the most relevant themes are as follows. First, the integration of technology into the habits of life is distinct from technology itself. It is not the mere presence of technology that makes a difference, it is how users interpret and respond to the technology that makes them cyborg. Second, technology is used to construct new cyborg identities that overcome existing hierarchies to better support users’

interpretations of themselves. These identities may be imperfect, partial, fractured, and changing, but they are still a foray into synthesizing the multiple streams that may influence a person. Third, cyborgs are an avenue into examining the hybrid, which merges boundaries between human/machine, culture/nature, and other dualisms. And cyborgs also transcend such boundaries by embracing information as pattern and randomness, allowing seemingly contradictory or nonsensical messages to be meaningful. And finally, despite the promise they offer towards construction of new identity, cyborgs are still in a space that in some ways reinforces old problems of gender and power, e.g., where women are somehow more restricted than men, or members of the developing world are barred from participating. However, an ironic subversion may be supported, where members of post-colonial societies may be uniquely equipped to be cyborg with their experience assimilating new influences.

2.2.2 Theoretical Application of Cyborgs

In this project, cyborg theorizing provides a lens on how people seamlessly integrate mobile phones with their daily patterns of life, become networked to one another, and become “hybrids” with their technology. Cyborg theory can offer some interpretation on how technology is used intimately, as an extension of the body. People are already integrated with technologies in nearly transparent ways such as wristwatch wearers who always “know” what time it is or near-sighted people who wear eyeglasses for almost all waking moments of their life. Mobile phones are poised to be such an essential tool as they shrink and become nearly invisible, in the physical and perceptual senses. The language that is used to describe mobile phones

already draws from body parts in that they are called “handy” or “hand” phones in several languages including German (*das Handy*), Finnish (*kännykka*), Chinese (*shouji*), and Uzbek (*qo'l telefon*). Thus it is a small step towards analyzing mobile phones as virtual body parts through a cyborg lens.

Thinking of the overlay of technology on people’s lives can help explain how people might become physically and emotionally attached to their mobile phones. Especially in places like Uzbekistan and India where digital technologies are not fully diffused, the attachment to technology is particularly fascinating because the users often have in recent memory and in adjacent rural areas, models of life independent of mobiles and computers. The seemingly irresistible attraction and utility that mobile phones hold for users can contribute to understanding how the phones are integrated into their communications repertoire.

Cyborg theory can shed light on how users reinforce their social networks with mobile technology. The mobile phone makes it easier to make and receive calls and creates new opportunities to communicate with others through perpetual contact. This kind of convenience affects how people relate to others, with changes including users having less concern about leaving the house without fixing social plans because they can always be micro-adjusted (Ling & Yttri, 2002) or calling a friend just to kill time while waiting for a train to arrive. In the Uzbek and Indian contexts where social networks are valued, mobile phones enhance the frequency of social connections, results that are reported in Chapters 3 and 4.

Cyborg theory also offers promise in explaining novel communication patterns with mobile phones that suit contemporary conditions. As earlier described, the research sites of Tashkent and Bangalore are rapidly changing and becoming culturally mixed. People have obligations and opportunities not available to previous generations, and they live in complicated environments where work, family, friends, or loved ones may be distributed in multiple cities and time zones. To cope with these shifting settings, people may develop communication patterns such as crafting a home away from home with regular phone calls to parents.

New identities may also be crafted in cyborg manner. Occupation of hybrid spaces requires synthesizing an identity that blends together multiple poles or that supersedes existing dualisms like technology/nature or modern/traditional. By using mobile phones to create new communication habits, users are simultaneously crafting new identities that allow them to be in multiple spaces at once, metaphorically. The perpetual contact that mobile phones afford changes how users relate to their phone and to others. For example, they can call a parent, even as they roam the streets with their friends. In that way, users use mobile phones to create an identity that reconciles sometimes antagonistic spheres.

In the contexts of Uzbekistan and India, cyborg theory allows for a test of Sandoval's (1995) assertion that post-colonial descendents of the subaltern are uniquely equipped to cope with technology because of their hybrid, difference-absorbing experiences. In this dissertation, it is argued that mobile phones are thoughtfully integrated into communications repertoires to support new, hybrid

identities. Users synthesize mobile phones with their bodies in a considered fashion rather than indiscriminately consuming them. This ability to construct new communication routines and identities is central to the new theory of mobile hybridity that is articulated in this project. Users closely integrate mobile phones with their communications repertoire to construct identities and personae that help them occupy culturally varied, shifting landscapes. Mobile phones are an appendage that is wielded for negotiating and navigating these spaces.

With this description of hybridity and cyborgs—the two conceptual theories used in this project—this chapter now turns to a review of empirical studies, first about computer-mediated communication and then mobile phones. This review discusses how the large umbrella theory of hybridity relates to these technologies.

2.3 Computer-Mediated Communication (CMC)

Computer-mediated communication (CMC) is included in this literature review for two reasons. First, it has theoretical traditions that lend themselves to mobile phone studies in that mobiles also facilitate a mediated form of communication. Second, an ecological understanding of ICT use is necessary to understand communication patterns. Mobile phones are the focus of this project, but computer use in Tashkent and Bangalore is also described in that it contextualizes the mobile use. This literature review provides a foundation for that discussion.

The literature about CMC lends a “historicity” to studies of mobile phone use because of shared thematic relationships such as reduced cues and blurring of spatial

boundaries, e.g., between home and work. Also, the early literature about the internet and CMC (e.g., Rheingold, 1993) had a level of enthusiasm that mirrors the excitement and possibilities that are highlighted in mobile phone literature. Early studies of CMC emphasized the strange and wonderful behaviors of users who were connecting with virtual strangers, playing with identity, and falling in love with “people they don’t know.” Mobile phone studies also often have a sense of wonder and bemusement at new lines that are crossed each day like very small children with mobiles (Oksman & Rautiainen, 2003) or making “meaningless” chatter over the phone (Johnsen, 2003). These parallels encourage an exploration of CMC simultaneous with mobile phone use.

CMC and mobile phone communication share an affinity, sometimes blurring into one another, with mobile phones capable of sending email and text messages to internet accounts, and computers having the capability of dialing out. Several networked communication applications are available over computers including email, instant messaging, chat room, voice chat, video chat, forums, blogs, and wikis. Most forms of CMC are “lean media” that strip out many of the social, contextual, and nonverbal cues that accompany communication in “rich media” like video chat or face-to-face conversation (Kiesler, Siegel, & McGuire, 1984).

An important difference between CMC and mobiles is that phone users may communicate from any point, whereas computer users are generally fixed to one location. This mobility is a crucial distinction when theorizing about phones and computers because the freedom of movement enjoyed by mobile users creates new

styles of interaction as well as opportunities for friction, which are detailed in 2.4 Mobile Phone Use. A second difference is that CMC can be one-to-one or broadcast, whereas mobile phones primarily support dyadic conversation (but do have one-to-many capabilities such as sending an SMS to multiple friends at once). A third significant difference is that mobile phones, especially in the context of this project, should not be considered mini-computers. Although many mobile handsets have computing capabilities supporting email, calendaring, and games, they are foremost devices that support voice and SMS conversation.

In this section, literature related to CMC is reviewed so that these theories can be extended to this study of mobile phone use. The literature about supporting personal and romantic relationships and the blurring of spatial boundaries through the CMC is presented. The especially relevant aspects of CMC are its support for communication at a distance and how its mediated nature blurs spatial boundaries. Additionally, a particular kind of hybridity—the use of CMC to construct transnational identity and to connect diasporic communities—is explored. This phenomenon of networked national and ethnic identity has yet to be addressed in the mobile literature; however, this discussion is relevant to this project because the participants in the Bangalore study use CMC to connect with loved ones who are overseas. Overall, this review of CMC studies is an empirical starting point for explaining mobile hybridity: it shows how mediated communication contributes to cultural fusions and simultaneously supports new expressions of hybrid selves.

2.3.1 Supporting Personal Relationships with CMC

People can communicate through computers with anyone else who has access to information and communication networks. In the early stages of CMC research, the tendency was to focus on the communication and interaction afforded by computers with less consideration to the location of the communicators despite the interesting juxtaposition of a user who must be physically somewhere and yet elect to be virtually anywhere (Jones, 1995). Computer users were discovered to form ties and attachments with people online, even those they never met in “real life,” having lively, evocative exchanges through text on a screen (Rheingold, 1993; Turkle, 1995). Some research suggested that people who actively participated in online communities and appeared to retreat from real life society actually experienced social contact with people online (Wellman & Gulia, 1999) and increased their social capital and participation in offline voluntary organizations and politics (Wellman, Quan-Haase, Witte, & Hampton, 2001).

Although CMC is a boon for connecting people in virtual communities, it can also support more intimate, personal relationships, with friendships engaged in more complex, electronic contexts (Adams, 1998). This literature review highlights research on the formation of attachments and personal relationships online. In particular, the studies that are presented here explain two central theories of CMC (social information processing and media richness), contrast communication between individuals with that in large communities, describe the range of uses of instant

messaging as a medium for personal communication, and consider the effect of culture on CMC.

An important framework for understanding how CMC can support personal relationships is “social information processing,” which articulates how users take information from online communication and use it to form impressions about others (Walther, 1992). In that context, nonverbal information such as the stretched time in asynchronous communication or implied textual meanings can impact relationships as much as the linguistic messages in emails (Walther, 1996; Walther, Loh, & Granka, 2005). Users are capable of forming relationships online if given enough opportunity to share information and learn about the other party. The stripped down nature of CMC makes impression development online slower because of the longer time required to exchange information textually than face-to-face and the fewer channels of information, e.g., only text and very little nonverbal with the exception of chronemic (time) cues.

An early study of email use in a corporation found that decreased social context cues affected communication patterns, but not negatively: employees showed a preference for communicating with superiors via email, suggesting that email decreased barriers associated with communicating up the chain of command; the information conveyed by email was often new and not duplicated elsewhere (Sproull & Kiesler, 1986). That study also hypothesized that the lack of cues contributed towards more “uninhibited behavior” over email, e.g., flaming or sending off-topic messages at work. But based on the cues that are available, users evaluate the

trustworthiness of their online friendships with attention to reputation, self-disclosure, and situational factors (Henderson & Gilding, 2004). For that reason, it is possible to “know” someone even if the only medium of interaction is on the computer.

A companion framework to social information processing is media richness theory, which suggests that the multiplicity of information cues and the immediacy of feedback help determine the suitability of media for various kinds of messages or interactions (Dennis, Kinney, & Hung, 1999). Factual information is often suited to lean media such as email; complicated, ambiguous activities are better suited to rich media such as face-to-face communication. Media richness theory helps to explain why people misinterpret messages over email. When there is only one cue—text—the intent of the message is easy to misread because redundant information such as facial expression, tone of voice, gesture, or perhaps even familiarity with the personality is not available. The addition of smiley faces to email is an attempt to add additional cues in case a message might be misinterpreted.

Although media richness theory might suggest that the communication medium should fit well with the message, Haythornthwaite, Wellman, and Garton (1998) cite studies that imply that matching the communication medium to the message is not so critical. Indeed, some computer media may appear rich by virtue of how they are used. Users who need to feel close to each other might use e-mail frequently to approximate intimacy, even though regular, face-to-face interactions might be more appropriate for bonding. Matching information to the medium is not as

important as supporting the underlying social relationships, especially given that many relationships move back and forth between online and real-life.

Taken as a set, social information processing and media richness theory suggest that the flexibility of CMC makes it a useful tool for supporting personal relationships. People are able to forge relationships and complete tasks in online environments, regardless of the leanness of the medium. In juxtaposition with this promise, several researchers have reported instances of breakdowns in communication and trust, particularly in relationships formed through virtual communities like discussion boards and MOOs (Stone, 1995; Kolko & Reid, 1998; Dibbell, 1999). However, generally CMC can create new opportunities for supporting personal relationships that overcome physical or geographic barriers.

Personal relationships supported by CMC should be distinguished from broad, group-based communication, such as public virtual communities. How one participates in a large group with strangers is a different dynamic than how one forms individual connections to people, a distinction that is clearer when one considers behavior in a crowd versus an intimate tête-à-tête. Personal relationships hold special meaning for people, such as those with family, a good friend, or a romantic partner. But rich friendships and connections can and do develop in virtual communities, which may be centered around commonalities and interests such as the band Phish (Watson, 1997), soap operas (Baym, 1998), lesbianism (Correll, 1995), games (Schaap, 2002), or racial hate (Zickmund, 1997). One early empirical study found personal relationships were commonplace in newsgroups and Usenet, where online

friendships evolved naturally as users invested time in the groups (Parks & Floyd, 1996).

Personal relationships can also be facilitated through social networking sites like Friendster¹, MySpace², or Orkut³, sites that explicitly support users as they try to make friends or new acquaintances. One analysis of Friendster found that users seek to connect to one another by looking for old friends, new friends, professional contacts, dates, or “hookups” (boyd, 2004). Social networking sites allow users to articulate online whom they know and are friends with (at least in virtual space), an explicit variant of the social networks that fill everyone’s real life space.

Social networks are also supported through tools like instant messaging (IM), a lightweight chatting system that indicates social presence of friends who are online. American teenagers use IM to keep in regular contact with their friends, but at least one study showed they are not making more friendships or ties over IM, nor are they creating weaker ties: face-to-face and IM social networks do not overlap much (Bryant, Sanders-Jackson, & Smallwood, 2006). High school teens value IM for the silence and independence it affords in the domestic ecology, suggesting autonomy is a motivation for using IM (Grinter & Palen, 2002). But IM does not restrict relationships to the online space: IM has also been found to strengthen a teen’s group identity as well as increase contact time with offline social networks (Grinter & Palen, 2002; Boneva, Quinn, Kraut, Kiesler, & Shklovski, 2006). In addition, IM draws

¹ <http://www.friendster.com/>

² <http://myspace.com/>

³ <http://www.orkut.com/>

people into affective and socially intimate relationship, and frequent IM conversation often impels people toward face-to-face meetings (Hu, Wood, Smith, & Westbrook, 2004).

IM has also been found in the workplace to support both work and personal communication, e.g., the worker IMing with family or friends while at the office. IM must be adopted by a significant number of work colleagues in order to be effective as an office tool (Herbsleb, Atkins, Boyer, Handel, & Finholt, 2002). Much more than a quick or brief text exchange, IM is a way to establish “outeraction” or reaching out and preparing for a conversation (Nardi, Whittaker, & Bradner, 2000). Outeraction includes the process of determining whether someone is available for conversation, establishing a social connection, and maintaining conversational context and continuity with the pauses and interruptions that often accompany IM conversation. IM has been found to be used for burst communication of quick questions, coordinating meetings (including impromptu ones), and keeping in touch with friends and family (Nardi et al., 2000), but one study found that complex work discussions are also being held over IM (Isaacs, Walendowski, Whittaker, Schiano, & Kamm, 2002).

These studies of work use of IM are relevant to understanding how IM can support personal relationships in that they show patterns of behavior that bleed through to social use of the technology. The etiquette of pinging and establishing contact before launching into a chat is one that is applicable to social IM. These studies show how IM, a lean medium, is used for lightweight communication and

adapted for thicker conversations. And although the constant notification from IM can distract users from their core tasks, it may be a sensible, timely interruption such as when a child pings his mother to say he is not feeling well.

Social communication tools are used in ways that reflect users' cultural backgrounds. Cultural differences have been observed in the IM styles of Asians and North Americans, where Asians use richer forms of IM with audio-visual support and chat with multiple people more often than North Americans (Kayan, Fussell, & Setlock, 2006). Likewise, behavior over IM while completing collaboration tasks also revealed differences between Chinese and American users' goals: Chinese pairs attempted to build consensus regardless of whether they were communicating over IM or face-to-face, and American pairs were more efficient (completed tasks in fewer conversational turns) (Setlock, Fussell, & Neuwirth, 2004). There are also cross-cultural similarities in how CMC is used to support personal relationships. One study found that, regardless of cultural background, Korean, Japanese, and American users equated greater love, liking, and commitment to their online relationships with increased self-disclosure (Yum & Hara, 2005). And like culture, gender identity is also inscribed in electronic communication, with linguistic differences observed in the IM of college students, with females having longer conversations than men (Baron, 2004). As a whole, these studies of culture and IM suggest how people adopt technology and use it in culturally meaningful ways, with research suggesting that users build online relationships much as they do real-space relationships.

In sum, the literature about CMC's support for personal relationships suggests the following two themes. First, CMC has its own etiquette of use in response to its stripped down environment. Users in many ways edit their activity to the medium, e.g., IM "outeraction" that has a different conversational style than face-to-face, or including smiley faces in emails to soften a message. They also infer social information from the cues that are available in CMC, which are leaner than in face-to-face. Second, CMC often supplements face-to-face relationships in a communication ecology. For example, teenagers strengthen their existing friendships with IM. These issues of CMC are revisited in the Tashkent and Bangalore studies, where participants discuss CMC to connect with others.

2.3.2 Supporting Romantic Relationships with CMC

Online dating sites are probably the most discussed digital medium for finding love. But romantic relationships can be nurtured through any form of CMC such as chat or online games. People make romantic connections through online venues like MySpace or game chat rooms or email exchanges at work, a diversity of possibilities that mimics the randomness of love in real space. Romantic relationships may stay completely virtual, transition into real space, or be "mixed-mode" with virtual and real interactions. Early literature emphasized the rich possibilities of online attraction where physical characteristics are not as important, and people can emotionally connect regardless of issues of distance (Cooper & Sportolari, 1997). Contemporary views of technology and romance are more tempered in their assessments, often focusing on potential abuse. A discourse analysis of Ann Landers advice columns

revealed mostly cautionary letters from readers about the internet as a forum for illicit liaisons (Baym, 2006). And computer-mediated romantic relationships can have negative consequences for families when someone uses the internet to ignore conflicts at home or have an affair (Merkle & Richardson, 2000).

This range of interpretations about the internet and romance suggests why romantic relationships are a productive research site for technological studies. CMC promises to improve romantic relationships by easing the search for a mate or supporting an even closer relationship with a lover. But disjunctures between the online and offline worlds complicate computer-mediated relationships. This literature review about supporting romantic relationships through CMC focuses on the special nature of online romance. It describes online romance and discusses the problems of transitioning a relationship into real space. The remainder of the studies discusses various aspects of identity formation online within a romantic context. These include the first impressions of online dating ads, disclosure and identity, cultural identity, and closeted identity.

The potential stages of a relationship kindled online are similar to in-person relationships in that there can be playful flirting (Whitty & Carr, 2003), love (Ben-Ze'ev, 2004), sex (Ross, 2005), and cheating (Whitty, 2005). The ability to have romance at a distance, though, allows users to fantasize and imagine about the relationship and to remain anonymous if they so choose (Ben-Ze'ev, 2004). Online relationships seem to have an accelerated intensity that is different than in real space: in one taxonomy, the stages of online intimacy are characterized as rapid falling in

love, a period of deep, “soul mate”-like connection, and mutual optimization and idealization (Albright & Conran, 2003). The flexibility of online relationships—they can be anonymous and/or intimate, spiritual and/or physical, fantastic and/or normal—supports different purposes in seeking a partner online. One study suggested that possible motivations for internet daters include companionship, freedom from commitment and stereotypes, or an amorous adventure (Lawson & Leck, 2006).

Internet users regularly fall in love with people they encounter online, but these people are not disembodied brains and ideas and words: they are highly personified. What starts as disembodied anonymity online builds trust and then forms an offline relationship (Hardey, 2002). As the literature about relationship formation suggests, users attribute meaning to and interpret their online exchanges with others to construct an image of who their communication partner is. Or they associate the computer experience itself with the relationship. Ullman (1996) describes how an email correspondence she had with a man developed into a passionate and emotive love affair that fizzled because real life did not have the same textual chemistry. Anecdotally, experienced online daters recommend transitioning any potential relationship into some kind of real space as soon as possible to avoid the strangeness of developing a rapport online that cannot survive in real space.

Much of the computer-mediated romance literature focuses on how people find one another on dating sites that are especially for those who are “looking for love.” Online dating sites are explicit places for users to find potential matches either for dating, romance, or marriage, and they have kinship with newspaper personal ads.

An incredible number of sites exist, each with a different flavor or clientele, including Match¹ (“the #1 site for love”) and Shaadi² (“the world’s largest matrimonial service”). Dating sites can be empowering: online daters have been found to overcome barriers for starting relationships related to shyness or gender-based roles (Scharlott & Christ, 1995). But the promise of dating Web sites can be contradictory. As noted by Van Acker (2001), the internet facilitates fantasies of true love and soul matches, but it also reinforces etiquette and behaviors that may be restrictive such as men still typically making the first move.

Online dating sites are a rich, large-scale source of data about how people attract and seek out mates in textual and visual virtual spaces. Finding a match on most dating sites can be a focused and precise experience based on requesting certain physical characteristics or verbalized traits rather than on the intangibles or serendipity that may spark an attraction in other venues such as a cocktail party or a chat exchange during an online poker game. One statistical analysis found homophily to be a driving force in mate selection in an online dating site, revealing that users seek those who are like themselves in terms of marital background or desire for children, as well as in terms of physical attractiveness (Fiore & Donath, 2005). Choosing qualities that seem important about a potential date as well as oneself, such as desire for children, is a kind of identity construction where values are selectively brought to the forefront.

¹ <http://www.match.com/>

² <http://www.shaadi.com/>

The process of crafting an identity and expressing desired traits in a romantic partner occurs in all mediated romantic relationships but are most studied in online dating. Online personal ads and profiles on dating sites can be a first step in the presentation of identity, with studies suggesting these ads and profiles are created in gendered and sexually oriented manners (Gudelunas, 2005; Groom & Pennebaker, 2005; Siibak, 2006). Locality has also been found in online personal ads, with one study revealing that gay personal ads expressed desire for physically nearby dates and identified with a local gay community rather than a virtual global gay community (Gudelunas, 2005). The identity that is presented in an ad is not static: online daters can recursively explore and craft their identity based on online and offline feedback, both in a superficial sense of adjusting the wording of an ad as well as re-evaluating their real selves (Yurchisin, Watchravesringkan, & McCabe, 2005). This crafting of identity with online personal ads and dating profiles suggests the potential for CMC to support multiple selves to suit different situations. Users can create an online image of who they want to be or who they think they are that accomplishes their romantic purposes.

Issues of identity and self are also important when daters begin to engage in a relationship with romantic intentions. While interacting with a potential partner, the information that is disclosed is part of the crafting of identity. Testing social information processing theory, one study found that users pay attention to small cues such as typos in online ads, try to balance being brutally honest with presenting a picture of an ideal self, and attempt to establish credibility with judicious use of

photos (Ellison, Heino, & Gibbs, 2006). A related study found that self-disclosure, or sharing information about oneself, can affect the perceived success of the online dating experience (Gibbs, Ellison, & Heino, 2006). The amount that is shared, the intent with which information is disclosed, and whether the information is positive predicts online dating success. That study also found a relationship between anticipated face-to-face interaction and self-disclosure online, suggesting that when users might be held accountable in a face-to-face meeting that can verify whether they are as described online, self-disclosure becomes more important. These relationships are a constant negotiation between partners, building trust, and a testing of the “truth” of what was said over email (Hardey, 2004).

The flexibility that CMC provides for crafting identity also allows various cultures to shape how they use the internet for romance. Online dating and matchmaking are popular in many communities. Nigerians, with their tradition of matchmaking, have found affinity with online dating services, and national Nigerian dating services bring hope that religious and ethnic differences in the country can be bridged (Adesina & Ayodele, 2004). Young Mormons, who are encouraged to be chaste and carry out the work of God with a spouse, find fellowship, spirituality, and sometimes life partners in virtual space (Scott, 2002). Transnational romances are also supported online, especially through “mail-order bride” sites, where men are introduced to women from other countries with the view of marriage and the bride migrating to the man’s home. The women primarily come from developing countries and the men from industrialized nations, so relationships typically start with culture

clash and power imbalance. A qualitative study of this transnational dating space found that American men looked for brides from Latin America to reaffirm traditional notions of masculinity, which they felt would not be possible with an American spouse (Schaeffer-Gabriel, 2006). These three studies show how identity in the form of cultural beliefs and values is intertwined with computer-mediated relationships. The romances that are forged are predicated on finding someone who shares the same values, either in the same community or in a different country.

The final theme to be discussed in this review of CMC and romantic relationships is the internet's support for counter-normative relationships or beliefs. Many virtual communities and dating sites allow anonymous interactions through pseudonymous nicknames and selective inclusion (or exclusion) of personal information and photographs. The internet is an ideal medium for supporting secretive relationships that may be perceived as inappropriate such as same-sex, interracial, or interfaith ones (see Goodwin & Cramer, 2002, for a collection of essays about "unconventional, disapproved, and forbidden" relationships that include patient-therapist romance, extramarital affairs, and cross-gender friendships). And likewise, the internet can create nurturing communities that support people in such relationships. Roy (2003) found that the internet was critical for connecting dispersed and closeted South Asian gays, giving them access to information and a network of people who understood the challenges of being South Asian and gay. For these disapproved relationships, CMC can be a boon.

The themes of these studies of romantic uses of CMC can be summarized as the following. First, romantic relationships over CMC mirror those in real spaces in that there are stages to the romance and emotions. People fall in love online and conduct courtships. Second, users craft an online identity through their words and photos to serve their romantic purposes. This identity may be anonymous to allow users to safely explore selves that they cannot exhibit in real space (e.g., homosexuality), or it may be an “improved” version of oneself. Third, these relationships may experience difficulty when transitioning between CMC and real space because of increased experience with one mode or because of discrepancies between online and offline identities. These themes of mediated romance are central to the Bangalore study.

2.3.3 Hybridity and CMC

Use of networked technologies automatically creates borderlands and multiple ways of being: even passively surfing the Web situates the user simultaneously at her computer and at a Web site that may be hosted somewhere far away. A user can be isolated at home on a personal computer while having rich, multiple social interactions in cyberspace in chat rooms or via email and instant messaging. Computer networks allow new ways of being: alone but not alone; at home but dialed into work; white male accountant in real life, female night elf in an online role-playing game. The ability of computer networks to bridge distances of space and time, create new ways of being, and produce new forms of expression makes them a productive site to explore issues of hybridity. CMC creates liminal spaces and

supports expressions of hybrid selves, blurring boundaries and creating new ways of relating to one another. Bearing in mind these capabilities of CMC, the main themes that are discussed in this section are the blurring of boundaries of various domains and the expression of hybrid cultural identity.

The internet serves a blend of functions and is consequently difficult to classify and pigeonhole for most users. Users can conceptualize the internet as a medium for communication, information, entertainment, education, or romance, for example. For that reason, the internet complements existing media, and internet use has integrated itself with existing patterns of behavior (DiMaggio, Hargittai, Neuman, & Robinson, 2001). CMC thus seems poised to occupy a liminal space, an intersection of possible activities. With a frame of hybridity and cyborg theory, it can be seen how the internet can be a “third space” for users to construct identities that serve their multiplex purposes.

CMC blurs spatial boundaries because it connects spaces, constructs identities, and builds virtual worlds: the user is physically in one body and digitally in another space. Early research about cyberspace focused on its role in creating de-centered and multiple senses of identity where users do not feel tied to one place or to one persona (Turkle, 1995). Although sometimes a playful experimentation, such as “trying on” a different gender or race in a chatroom, the identities created are often very real and sincere. The consequences of such experimentation can be serious: a male psychiatrist who created an admired female persona online received strong community criticism when she “died” and his deception was uncovered (Stone, 1995). Similar community

reaction resulted from the textual “rape in cyberspace” that occurred in LambdaMOO¹, where the resultant hurt and outrage prompted revisiting the community’s rules of self-governance (Dibbell, 1999).

Today, online role-playing games, like World of Warcraft², support enduring characters and community guilds, making it possible to have an online home for exploring identity and making friendships. World of Warcraft has a robust online economy where players can engage in craft, farming, and other productive activities, with the gold of the economy bleeding through into real world sales on eBay (see Castranova, 2005, for a discussion of the economies of online games and subsequent impact on real world finance). The strength of such virtual worlds has prompted some to argue that the blurring of the lines between reality and virtual reality necessitates examining how intellectual property law applies to cyberspace because virtual communities inevitably reference real world objects and people (Jones, 2006). The creation of personas, identities, and characters that live in cyberspace illustrates how the internet makes it possible to explore different subjectivities. A cyborg perspective would suggest that these identities created online help users overcome limitations that they may have in real space. They have a freedom to explore and also to take risks and transgress norms, both online and offline.

Computer networks also blur boundaries of personal space with their pervasiveness: because people can connect to the internet almost anywhere, the

¹ <http://www.lambdamoo.info/>

² <http://www.worldofwarcraft.com/>

technology is seeping into all aspects of life. The problem of constant availability and ubiquitous internet is often formulated in the popular press as the overwhelming volume of digital information that reaches users daily in their email inboxes, with some users irresistibly checking for messages. Haythornthwaite (2001) observes that digital networks are now indispensable parts of life: the number of users online is growing, and more activities can be accomplished online. Additionally, the internet is increasingly available at home. The constant presence of networked communication makes it hard to judge when one is truly alone and “offline” or still online receiving communication. This perpetual contact is a crucial theme that is addressed in the mobile phone literature where the demarcation of personal space becomes fuzzy when there is constant connection with others. This networked connection with others is cyborg in that users are invisibly linked to one another through ICT.

The pervasiveness of networked technology and the blurring of location blend work and home lives together (an ironic parallel with agrarian contexts where work and home spheres also overlap). Workers conducting more personal business at the office are one manifestation of the merger of the two spaces. This increase of personal business is partially due to the ease and convenience of mediated communication such as receiving a subtle, unobtrusive IM from a child, or doing some Web browsing while taking a break at work. And work is also showing up at home. The infiltration of the home by work is aided by electronic networks that give access to email and corporate servers during after-hours or vacations. For people who are scheduled to work at home, the confusion can be sharp. “Mental, physical, and

psychological boundaries” are challenged when working at home, in that domestic cues and demands for attention are competing with work (Salazar, 2001). In other words, it may be hard to feel like one is “at work” if baby is crying and the laundry is waiting in the next room. Another empirical study found that isolation, distractions, and “workaholism” are real problems for home-based white-collar workers but are probably somewhat exaggerated in the literature (Ammons & Markham, 2004). These boundaries between home and work are highly permeable.

Even for people who do not work remotely, the home looks increasingly like a mechanized office with the computers and gadgets that might be found in it to support household needs or children’s schoolwork. Modern, “high-tech” homes are strung with data cables, networked, and made “smart” with digital controls for light, heat, and security and integrated entertainment and media systems. Some recent research projects have looked at how domestic lives intersect with technology, with projects considering how families make “to do” lists (Taylor & Swan, 2004), manage calendars and schedules (Taylor & Swan, 2005), attempt to set up their home networks (Grinter, Edwards, Newman, & Ducheneaut, 2005), or conceptualize the capabilities of these networks (Bly, Schilit, McDonald, Rosario, & Saint-Hilaire, 2006). The availability of technology at home has been problematic for families: Internet use at home has been linked with family conflicts and decreased time spent with family, with an overall perception of low family cohesion (Mesch, 2006). What this reinforces is how the home is not a bulwark against intrusions and threats but is

now connected to the same grid that office computers are on, allowing distractions to float through the home.

Some people integrate the two spaces of home and work into a synthetic whole, and others fight to segregate them, but regardless, these boundaries are negotiated and transformed by people over time (Nippert-Eng, 1996). One empirical study found that spillovers between home and work are increasing and are usually perceived as negative by family members (Chesley, 2005). Sociolinguistically, work and home are becoming fuzzy as well, with one study showing that people talk about home when asked about work and vice versa, suggesting they are inter-linked spheres (Montgomery, Panagopoulou, Peeters, & Schaufeli, 2005). That study also concluded that users talk about their work and home lives in multidimensional ways that overlap, for example, with people using social words to talk about both work and home or discussing cognitive processes in both spheres. As a whole, the research about home and work suggests that borders between them have become fuzzy because of unwanted intrusion of one world into another and also because users invite the two to merge together. In other words, people are constructing in cyborg fashion a blended world that incorporates the twin demands of home and work.

Like the increased fuzziness between home and work, the split between work and play is becoming less distinct. It is probably not coincidental that the freedom and excitement and possibilities surrounding the internet carried over to the workplaces of internet businesses during the dotcom boom, a period of time when free-flowing soda pop and scooters in the hallway became dotcom clichés. That kind of creative, fun

atmosphere has also been found at the trend-forecasting organization, the Institute for the Future, which uses a ludic approach to work: employees are encouraged to “play” and use skits and scenarios based on “heroes, villains, quests and fairy godmothers” as analytical tools (Brooks & Bowker, 2002). This inventive management strategy was an attempt to reinvigorate more mature new media companies that were pressured by innovative dotcoms at their pre-2000 peak. The blur between work and play can also be seen in gaming activity that is articulated as work. One analysis of game culture found that players sometimes referenced their game playing as a “chore” and “obligation” (Yee, 2006). That study found that the long hours logged into a game environment can feel like a job, one that has the potential of burnout as well. In fact, Yee argues that video games are inherently a platform that trains players to be workers: players work harder and faster for in-game rewards, a proof of Skinner’s theories of behavioral conditioning. Some digital game companies spot and hire talent from their communities of players, a confirmation of play as an activity leading towards work. The fusion of work with play displays the new opportunities that are created when two spheres are blended together. Work can be more creative, and game play can lead to paid work, suggesting the utility of liminal spaces for producing new ways of being.

Taken together, these studies of the internet and the blurring of boundaries show the difficulty of keeping networked spheres separate. They are literally connected and become less discrete. As more people use CMC, more transitional spaces emerge between spheres, creating opportunities for people to manage and

make meaning of these borderlands. CMC allows people to imagine other ways of being, travel anywhere they want without leaving their desktop computer, and live other lives. This borderless imagination has contributed to the blurring of spatial boundaries of home and work as it has the worlds of online and offline. Users can experiment with new, hybrid expressions of selves, constructed identities, and ways of living that transcend physical or geographic boundaries.

The second theme that is included in this discussion of hybridity and CMC is the creation and expression of identities that synthesize multiple cultural elements and represent diverse subjectivities. Historically, the Web itself has been associated with freedom and possibility, an artifact of the minimal legal regulation of the internet in its earliest days (Lessig, 1999). The accessibility of publishing on the internet compared with previous forms of mass media such as books has contributed to a romanticized view of the internet as utopian space, where diverse and subaltern voices speak in concert with dominant voices. In reality, the freedom and lack of regulation of the internet has resulted in a digital colonization of the Web, especially by American businesses, instrumentally affecting its prevailing language, tone, and uses. Under the veneer of “techno-universalism” lies a Web that is dominated by English language (Lockard, 2000). And the promised “utopia” actually glosses over or essentializes ethnic and racial difference (Nakamura, 2002).

Despite the strong presence on the internet of American commerce and English language, which may threaten cultural diversity (Kramarae, 1999), it seems that there can be a more hopeful future for the internet as a place that supports

individual expression especially of constructed selves. Increasingly the internet can be accessed from previously undeveloped locations in the world, and CMC is supporting specific cultural preferences and needs. An example of this culturally specific use is provided by a study of Chinese internet users who exhibited uniquely Chinese Web site design and consumption patterns that were distinctive from Western patterns (Bucher, 2004). These kinds of nativized uses of the internet demonstrate the flexibility of cyberspace for various cultural groups (including hybrid ones) to create a space that reflects their own unique purposes and allows them to explore their identities.

The literature frequently explores how the internet is a medium for users in liminal spaces to express their blended identities. Such users are experiencing the cultural hybridity of being caught between poles, whether those of majority/minority language, modern/traditional, or local/global. And like other forms of communication technology and media, the internet also serves to speed along this cultural fusion, as in Dubai, a vibrant city-state whose residents are influenced by multiple languages, widely available global brands, tourism, an international trade port, and foreign media broadcasts (Piecowyte & Badran, 2004). The internet often heralds previously impossible freedoms, such as women in Kuwait who participate in public discourse on the internet, an achievement that goes against longstanding religious structures and cultural institutions (Wheeler, 2001). A similar independence has also been documented in the United Arab Emirates, where female university students

experience an autonomy through media consumption that radically departs from the traditional Muslim culture of their families (Walters, Quinn, & Walters, 2005).

The internet is especially promising for multilingual expressions. Linguistic hybridity is more nuanced than a facility in multiple languages. Rather, language can symbolize cultural power, dominance, and heritage. Some questions of linguistic hybridity include use of English as lingua franca (with its acknowledgement of globalization and American cultural dominance), minority language survival (and its implications for cultural diversity), and linguistic fusions resulting from close contact of multiple languages in a community (and the resulting concerns of keeping a culture “pure”). The design of the internet is very much influenced by its Western origins, with some non-Latin alphabet-based languages like Arabic and Farsi only relatively recently supported by Web browsers. Additionally, Haarman (2001) observes that many world languages are not traditionally literate, such as American Sign Language or oral languages, and thus are not easily transferred to the textual environment of the Web. A post-colonial perspective would acknowledge that the content of the internet today is written by the dominant culture and is missing the intertwined, multiple narratives of marginalized people, who do not speak in a Web-supported language.

The clash between technology and local culture is immediately obvious when the local language is based on a non-Latin alphabet. On the internet, some Greeks write with Latin characters rather than the Greek alphabet because of the limitations imposed by Latin-based keyboards and computer systems. This hybrid of Latin alphabet and Greek language has been labeled by some as a threat to national identity

because it weakens the stature of the unique Greek alphabet (Koutsogiannis & Mitsikopoulou, 2003). Other linguistic communities have similarly started adapting to the demands of the technology, such as the Deaf and their modifications of American Sign Language to suit the Web cam environment rather than relying on English or textual communication over the internet (Keating & Mirus, 2003). These uses of the internet illustrate how language can re-shape itself to fit the technology that is available.

Specific cultural groups also may successfully adapt to the homogenizing forces on the internet in ways that honor local values. Switzerland has four official languages—German, French, Italian, and Romansch—each closely linked to specific regions, making interregional communication challenging and politically sensitive. For the sake of clear communication, the email list of a Swiss medical student association contained mostly messages written in English, which most list members understood. This non-Swiss language helped reduce the cross-lingual misunderstandings that would occur if messages were written only in German or French, the dominant languages (Durham, 2003). In this example, English was adopted to solve a practical problem in a culturally appropriate manner rather than threaten local culture. The Swiss example shows the pressures and isolation that minority language speakers can face, but it also demonstrates how English might be a new “pan-Swiss” language, one that does not have native origins but serves an important communicative function.

The internet also offers a space for exploring traditional cultures and identity, sometimes paradoxically providing a haven for minority expressions that cannot be found in real space. For example, ethnic Hawaiians are preserving their language through the internet. Many ethnic Hawaiians are concentrated in the islands, but sometimes Hawaiian language learners are more comfortable communicating online than speaking in person (Warschauer, 2000). One girl, who was shy about speaking Hawaiian face-to-face because she was only of partial Hawaiian heritage, felt free to use Hawaiian online without fear of being considered an outsider. With the aid of CMC, some Hawaiians are able to embrace their multicultural identities and practice the Hawaiian language without explaining their ethnic credentials.

CMC can also create a space for hybrid dialogue, as demonstrated by language and internet use in Taiwan. Mandarin is the official language of Taiwan, introduced when the Nationalist Chinese government relocated to the island in 1949. Language choice in Taiwan is politically sensitive, representing tensions between the people who came from mainland China and the native people who have lived on the island for generations (Sandel, 2003). Despite these conflicts, there is often much code-switching between Mandarin and Taiwanese in daily speech, and additionally, city-dwellers often sprinkle English, a common foreign language, into their everyday speech. Sensitively expressing this linguistic diversity requires creative orthography in textual environments. Su's (2003) study of electronic bulletin boards in Taiwan found that users textually approximated Taiwanese, Taiwanese-accented Mandarin, and English with standard Chinese characters and Zhuyin (Taiwanese phonetic

alphabet). This playful writing on the internet allowed users to express linguistic preferences and to “localize” English with Chinese writing. This mixed style of writing helps to construct a unique identity in Taiwan, one that successfully merges Chinese, Taiwanese, and English.

As a whole, these studies reveal some themes that are central to the Tashkent and Bangalore studies, related to both CMC and mobile phone use. First, CMC blurs the borders of online/offline worlds and work/home. Users purposefully seek the fusion of multiple spheres, but sometimes they are also resisting it such as when work is intruding on home. However, this merger of spheres helps users to occupy the liminal space between spheres, that is, to be in two places at once. Second, users construct culturally blended identities. This is most often expressed when multiple languages intertwine with creative uses of CMC, but it is also seen in broader cultural fusions such as women in a conservative society given a taste of freedom on the internet. Finally, new opportunities are produced in these blendings, whether it is the freedoms experienced by Muslim women through the internet, or the chance to work at home and spend more time with family. This purposeful use of CMC to construct new identities and to innovatively interact with the worlds that one occupies is a powerful example of cyborg synthesis of many cultural influences.

2.3.4 Transnational Expression over CMC

CMC is used to connect transnational and diasporic culture, an acknowledgement of Appadurai’s (1996) cosmopolitan world with its permeable borders. Through computers and telephones, emigrants connect with loved ones back

home as well as others from their culture. This literature review is included in this dissertation because transnational communication is explored in the Bangalore study as some participants communicate with loved ones overseas. It is also included to show an important gap and future direction for mobile phone research. Given the mobility of people across borders and the popularity of mobile phones for immigrants, mobiles should play a role in keeping people in touch with their social networks back home and a broader ethnic culture. Leaning on the CMC literature can provide clues to how mobile phones might become incorporated in the communications repertoires of transnational cultures.

As characterized by Appadurai's (1996) vision of modernity at large, the globalized world is made up of porous national borders, with a steady migration of people between nation-states. Some countries specialize in "exporting" workers, like the Philippines where overseas workers' remittances home are a significant contribution to the national economy. These workers rely on pre-paid calling cards to stay connected with home; these cheap calls are an important "social glue" for diasporic networks (Vertovec, 2004). And increasingly, CMC is incorporated into communications repertoires to keep in touch with home and to support transnational groups.

The ability of CMC to put an emigrant in touch with several people at once is an important distinction from past communication methods that were primarily one-to-one (such as phone calls or letters). CMC allows people to stay in touch with holistic networks of friends and family rather than individual members. This network

connection is a crucial premise of the global cultural flows. With CMC, overseas residents can be part of a transnational “ethnoscape” rather than just numerous dyads. These ethnoscares help to create a transnational identity.

Unlike the singular national identity supported by traditional media that Anderson (1991) described in his framework of “imagined communities,” new media like the internet create a plural identity. The internet empowers diverse people to broadcast their messages, thus promising the ability to construct new kinds of identity including that of the transnational. Users can identify their affinity groups by producing content or by choosing to participate in online communities. Stratton (1997) notes that the interactivity of the internet flies in the face of the passive audience and consumer assumed in traditional media. This interactivity changes the locus of power between individuals and large structures such as corporations and governments, thus creating multidirectional global cultural flows rather than centralized broadcast. In this way, transnational identity can be supported.

Diasporas are poised to take advantage of the internet’s transnationality, as they are in need of a “third space” to connect with others of their culture. Some examples of the internet connecting far-flung members of a culture include Trinians who leave Trinidad for better work prospects (Miller & Slater, 2000), Indians located all around the world (Mitra, 1997), and Hong Kongers who study or live overseas (Fung, 2002). Fung’s work especially highlights the need that Asian emigrants might have for communing with people from similar backgrounds because of discrimination overseas or the burden of the model minority myth. However, the internet’s support

for diasporic communities has also been problematized, prompting questions of whether the internet actually serves to connect a worldwide transnational culture or simply allow localized immigrant communities scattered around the world to further splinter from their homeland, an issue raised about Russian internet users (Schmidt, 2004).

Transnational groups can express their identity discursively through CMC. Dialogue with others like oneself can crystallize the common experiences of a cultural group and shape a shared identity, even if it is problematic. For example, Mitra (1997) found that the passionate discussion in the Usenet group soc.culture.indian both bonded group members closer together and tore them apart because of differing political views about being Indian. The overseas Hong Kongers on the HKNet discussion group, whom Fung (2002) studied, exchanged messages about their experiences as overseas Chinese, thus defining the nature of being Hong Kong Chinese in a foreign country. Trinidadians use internet chat spaces for “liming,” or hanging out and gossiping, a ritual of Trini daily life that has been seamlessly adopted in cyberspace (Miller & Slater, 2000). Giving internet chat a uniquely Trini name suggests that they have molded the internet for their own cultural purposes. Chatting with other Trinidadians about news and issues of cultural interest creates a distinctively Trini presence on the internet.

Existing studies of mobile phone use do not yet have the nuanced discussion of transnational networks that is found in the CMC literature. As shown in 2.4 Mobile Phone Use, studies of mobile phones document the emerging culture of mobile phone

users, yet, for the most part, these cultures' connections to a broader national or transnational identity via mobile phones are unexplored, with the exception of Horst's (2006) work on mobile phones as a tool in Jamaican global networks and Rafael's (2003) discussion of the People Power II national protests in the Philippines.

However, homegrown uses of mobile phones are often reported in the media such as the daisy chain of three-way calling on mobile phones that connect Chinese immigrants scattered around the U.S. for group Bible study in Fujianese dialect (Luo, 2006). Part of the explanation for this opening in the literature may be that mobile phone communication is often construed as personal space rather than an opportunity for a large network or transnational group to connect. As more people migrate and communicate primarily through mobile phones, this gap in the literature may become an area of interest for mobile phone scholars.

The overall literature about CMC that was presented informs the Tashkent and Bangalore studies as part of the lineage of mediated communication research and also as contextualization of the computer use that is reported within participants' communications repertoires. The themes that were identified relating to personal and romantic relationships, boundary blur, culturally blended identities, and connection to global networks are revisited in the two studies. Investigating the intersections of technology and personal and romantic relationships yields information about how mobile phones are used to blur boundaries, create hybrid identities, and connect people to broader social networks—core elements of mobile hybridity.

In the next section, the literature about mobile phones is reviewed. Similar issues are highlighted, and because of differences between mobile phone and CMC technology, the issues are framed and discussed in different ways. For example, the blurring of boundaries between spheres that is reported in the CMC literature re-appears in the mobile literature as an issue of “perpetual contact” between individuals. Both mobile phones and computers afford mediated forms of technology, but the next section shows how the mobile phone has unique qualities that make it different from computers; namely, it is a small, personal, portable device that most users perceive as a telephonic device. The next section shows how mobility itself creates other nuances in the use of the technology and its subsequent effect on users.

2.4 Mobile Phone Use

The body of sociological studies of mobile phone use is growing. The range of topics that can be found in this literature include small children using the mobile (Kasesniemi & Rautiainen, 2002; Oksman & Rautiainen, 2003), mobiles as an expression of fashion and identity (Ling, 2003; Katz & Sugiyama, 2006), mobiles aiding development in rural economies (Aminuzzaman et al., 2003), and mobiles connecting the hearing impaired (Power & Power, 2004).¹ In this project, the thematic areas of the mobile phone literature that are most relevant concern digitally emergent spaces, personal and romantic relationships, and expressions of hybridity.

¹ Mobile phones are also part of the genealogy of social studies of landline phones (e.g., Pool, 1977; Fischer, 1992). These landline studies, except for Sarch’s (1993) study of single women, are not included in this literature review because the theory of mobile hybridity draws primarily from ideas about media, networks, and identity construction—ideas that are less addressed in the landline literature.

The studies that are reported here provide the context for the Tashkent and Bangalore studies. And as a set, these studies further develop the framework of mobile hybridity, or how mobile phone communication creates and responds to culturally shifting spaces.

2.4.1 Mobile Phone Use in Digitally Emergent Spaces

As characterized in the introduction of this dissertation, mobile phones are popular and vital communication tools in digitally emergent spaces. These digitally emergent spaces have infrastructure and cultural issues that affect mobile phone use in unique ways. In this literature review, Filipino mobile phone users are highlighted as a showcase of the breadth of behaviors that can be found in a digitally emergent setting. The remainder of the studies discusses mobile phone use within several digitally emergent societies. These studies consider the effect of culture on mobile use, support for social networks, non-instrumental motivations for use, and symbolism of the mobile. However, before the literature about digitally emergent phone use is presented, it is situated within the broader base of mobile phone literature. Thus the discussion of digitally emergent settings is prefaced by a brief review of research conducted in highly developed societies as well as those in developing countries.

Most sociological mobile studies have been conducted in highly digitally developed societies, where mobile phone use is ubiquitous among certain classes of people such as teens or the middle class and has become closely integrated with the patterns and rituals of everyday life. Because these societies have such prevalent

mobile phone use, they have developed many fascinating rituals and stories of mobile use such as the heavy use of Google's mobile search engine to look for "sex" (Kamvar & Baluja, 2006) and hyper-coordination and triangulation among mobile phone users when arranging to meet someone (Ling & Yttri, 2002). Further, mobile phone use occurs within a fabric of many information and communication options such as the landline or internet, making the choice to use a mobile also of interest. Some themes explored in this literature include youth culture (Henderson, Taylor, & Thomson, 2002; Grinter & Eldridge, 2003; Berg, Taylor, & Harper, 2003; Ito & Okabe, 2003; Oksman & Turtiainen, 2004), identity formation and presentation of self (Nafus & Tracey, 2002; Ling, 2003; Lobet-Maris, 2003; Srivastava, 2005; García-Montes, Caballero-Muñoz, & Pérez-Álvarez, 2006), norms of public mobile use (Murtagh, 2001; Plant, 2001; Humphreys, 2005; Ichikawa, Chipchase, & Grignani, 2005), and gender differences in mobile use (Lemish & Cohen, 2005; Igarashi, Takai, & Yoshida, 2005). Studies of mobile phone use in highly developed societies are included in the subsequent literature reviews about personal and romantic relationships and hybridity.

Another related body of mobile phone literature focuses largely on development projects in technologically under-served locations. These projects emphasize the role of mobile phones in enhancing local infrastructure to improve material well-being. One of the significant advantages of mobile devices in rural places is that they allow previously unconnected locations to be networked without requiring the expense of laying down wire to every household (Jamieson, 2002). In

fact, mobile phones are sometimes considered a more desirable or attainable method of access to the internet (Miller & Horst, 2005b). Much hope is placed in mobile phones—rather than the personal computer—as a bridge for the “digital divide” because they supplement weak transportation and communication systems and quantifiably boost gross domestic product (GDP) (Calling an end, 2005; The real digital, 2005). Often these mobile development projects are conceptualized as opportunities for foreign investment, economic growth, supporting entrepreneurs, or making remittances cheaper to send and receive (Scott, Batchelor, Ridley, & Jorgensen, 2004; Vodafone, 2005). Examples of such projects include e-Mobilizer, which allows Chinese artisans to sell their goods online via mobile phones (Loyalka, 2006) and the Village Phone program supported by Grameen Bank, which gives Bangladeshi women a source of income as well as providing villages much needed phone access (Aminuzzaman et al., 2003). These technologically under-served environments have some kinship with the nascent infrastructure of digitally emergent spaces. However, the emphasis on development and the specific focus on economic and material benefits of mobile phones are of a different nature than the social uses of the mobile phone that this project is interested in.

This project contends that digitally emergent spaces have unique concerns and infrastructure that impact use. As indicated in 1.3 Definition of Key Terms, “digitally emergent” refers to those places that are developing pervasive, digital telecommunication and media infrastructure. Because development is tied with money and the general economic health of a country, digitally emergent places have

low-to-middle income economies rather than the high-income economies found in high-tech societies like Japan or Sweden or the United States. In addition, many of the digitally emergent societies are newly independent states, fledgling democracies, or governmentally unstable: political conditions that affect digital development as well as the mindset of the population. Given these parameters, users in digitally emergent spaces have cultural, economic, technical, and political constraints on their information and communication technology choices (Wei & Kolko, 2005b).

The digitally emergent space that is best represented in the mobile literature is the Philippines—the texting capital of the world—renowned for its innovative uses of SMS and enthusiastic adoption of the mobile phone. As of 2005, Filipinos send about 200,000 text messages a day, or the highest volume of SMS anywhere in the world (Batino, 2005). Some examples of leading-edge mobile applications that can be found in the Philippines are money transfer and payments as well as religious functions such as sending evangelical messages (Ellwood-Clayton, 2005b).

Mobile phone use in the Philippines has been shaped by economic and technical circumstances. Rafael (2003) summarizes the reasons why mobile phones have taken off in the Philippines: mobiles are cheap whereas traditional landlines are difficult and expensive to acquire, and internet is typically accessed at a cybercafé. More significantly, Rafael suggests mobile ownership is also motivated by traffic congestion and unreliable postal service that make physical movement of people or information challenging. In other words, with a mobile, a lone person can overcome complicated infrastructure problems that need the cooperation and attention of

multiple people and government agencies. Even more powerfully, mobile users can coordinate en masse to cause political change. “People Power II,” the populist coup that overthrew President Estrada in 2001, was driven by individuals coordinating movements and protests with text messaging, which Rafael argues is a way that users can be part of the anonymous, faceless, crowd and still have an individual voice.

The innovative uses of mobile phones observed in the Philippines are shaped by the cultural and economic context of the country. In the *barangay* (village), telephones are not a reliable or instantaneous mode of communication because not everyone has a phone line (Strom, 2002). The inconsistent distribution of phones has thus created a cultural habit of doing things in person—whether to chat or take care of a chore—even if it may appear to take more time. In this type of setting, mobile phones are appreciated because they are more easily obtained than landlines and can be used in parallel with running errands in person. And more importantly, the mobile has woven itself into Filipino society by connecting people in complex ways, blurring boundaries, and situating the Philippines within the fabric of global modernity (Pertierra, Ugarte, Pingol, Hernandez, & Dacanay, 2002).

In the Philippines, mobiles have been incorporated into expressions of love and intimacy, particularly among young people as a way to send flirty or romantic text messages or to send messages to strange numbers asking to be a “textmate” (an intimate text pen pal) (Ellwood-Clayton, 2003; Pertierra, 2005; Ellwood-Clayton, 2006a). The relatively impersonal nature of text messages makes it easier to have intimate relationships and make personal disclosures even to the point of having “sex

texts” (Pertierra, 2005). Expressions of intimacy facilitated by mobile phones also extend to infidelity and deception (Ellwood-Clayton, 2005a).

The picture of the Philippines painted by these studies suggests that mobile phones fill a needed niche in the infrastructure to support communication. Existing systems, including traffic, post, and landlines, suffer from inefficiency and inconsistency that make mobile phones desirable tools. But besides supplementing or overcoming these weak systems, mobiles have been closely integrated into personal rituals such as prayer and romance. With mobiles connecting them in complex ways and blurring boundaries, Filipinos could be considered hybrid, cyborg users.

Other digitally emergent locations have also been studied for social uses of the mobile, particularly with respect to the influence of culture on use. For example, mobile phones are used by Chinese to make social connections and build relationships (*guanxi*) when face-to-face meetings are not possible—an important cultural habit with business benefits as well as more intangible purposes (Yu & Tng, 2003). In India, the strong collectivist culture influences the perception of the mobile as a device for group use and communication; when combined with the fact that the phone is still relatively expensive, it makes shared use of the phone common (Konkka, 2003). Technology use is shaped by culture regardless of locale, but in digitally emergent places, especially non-Western ones, adaptations of the phone may notably differ from those observed in highly developed societies.

Mobile phones are often used to support social networks in digitally emergent settings. Social ties and networks drive use of the mobile phone in Jamaica, where kinship is important and family networks are large. Horst and Miller (2005) observed that mobile phones support kinship networks through “link-ups” where the mobile phone is used to maintain social connections, such as calling someone just to say hello, rather than for specific instrumental purposes. Many Jamaicans live and work overseas, so mobile phones are essential for forging transnational bonds with family and friends (Horst, 2006). Use of the mobile is highly naturalized and as integrated into social and spiritual rituals of Jamaicans as these rituals are integrated into daily lives (Miller & Horst, 2005a). Mobile phones seem to be uniquely suited for supporting social networks. A study in Ghana noted that mobile phones are used to manage existing relationships with family, friends, and business, whereas the internet supports “fantasy” and conversation with foreigners (Slater & Kwami, 2005). Taken together, these studies suggest that the mobile phone is important for maintaining and strengthening social networks. This trend emerges in the Tashkent and Bangalore studies as well, places where personal connections are valued.

Although mobiles are perceived as a practical tool, they also are invested with emotional meanings and used for non-instrumental social purposes. Even when mobile phone calls are expensive, users develop cheap codes to express sentiments like “thinking of you” through the “beeping” (calling and then hanging up before the phone is answered) habit observed in Rwanda (Donner, 2005c). In Rwanda, mobiles are a practical tool for business owners, but they also make their owners feel happy

and important (Donner, 2004). And in Turkey, a survey project found no statistically significant relationship between actual use of the mobile phone and stated motivations of use related to business or instrumentality (Özcan & Koçak, 2003). However, actual mobile phone use significantly increased when linked to motivations related to security and sociability, e.g., for emergencies or communicating with friends, implying that Turkish people may be more compelled by personal or social reasons than by practical or business reasons for using mobiles. These findings would not be surprising in the context of a developed society where social and personal uses of the mobile are well studied. But given the relatively low incomes of these digitally emergent locations, pleasurable and social uses of the phone are particularly revealing. Mobile phone users enjoy their phone and the communication it affords with social networks and are willing to spend for the “extra” cost that “frivolous” use entails. This pattern suggests that the mobile carries a range of utility and personal meaning that contributes to users’ ability to develop cyborg relationships with it.

The mobile also has an iconic significance that makes it a special device. In post-communist locations, the mobile phone is a powerful cultural icon. Countries that previously had restricted freedom of speech and shortages of consumer goods are now experiencing economic growth and unprecedented middle-class affluence. In Bulgaria, mobiles symbolize this new prosperity and success (Varbanov, 2002). In Estonia, mobile phones also symbolize “consumer choice” or the freedom to move and speak, to choose a brand of mobile and to customize its features, to relax and have fun, and to express oneself (Keller, 2005). Mobiles also give Estonian users the

freedom and flexibility of multiple functions wrapped in one device: they can use the phone for voice mail, email, camera, paying parking fees, making donations, or voting in a TV poll (Runnel, Pruulmann-Vengerfeldt, & Keller, 2006). The symbolism of the mobile phone contributes to special feelings that users may develop around it.

This set of studies about digitally emergent settings reveals the following critical themes. First, the non-Western culture of many of these digitally emergent settings has created interesting patterns of use that center around groups and social networks. Mobiles phones are used to connect close networks of friends and family and to bring about more social connections. Second, mobiles phones bolster the weak points of an existing communication infrastructure, but they are not viewed only as tools. They are used for social activities and are imbued with personal meaning and iconic symbolism. This rich perception of mobiles facilitates a cyborg perception of the mobile as something that is powerful, useful, and meaningful and can fit into many aspects of life. The Filipino example suggests the kind of context that can create novel, cyborg uses of the phone. These themes inform the studies of personal and romantic relationships in Tashkent and Bangalore.

2.4.2 Supporting Personal Relationships with Mobile Phones

This literature review now turns towards use of the mobile for supporting personal relationships. These studies, primarily drawn from developed settings, describe the multiple ways that the mobile phone has been adopted and incorporated into the rituals and customs of personal relationships. This review discusses public

norms of use, the theoretical impact of mobility on relationships, mobile relationships with friends, and mobile relationships with family. These studies provide foundation for understanding personal relationships in Tashkent and Bangalore.

Elaborate rituals and customs have developed around mobile communication. Some of these rituals are evident to the casual observer suggesting that even when the mobile user is “only talking on the phone,” the behavior also affects people nearby. A field study in the U.K. revealed a choreographed pattern of behavior shared by both mobile users and their surrounding listeners on public transportation (Murtagh, 2001). Mobile users attempted to create privacy by averting their gaze, turning their heads, or moving to private spaces; surrounding passengers offered privacy by turning their eyes away, in the manner of Goffman’s civil inattention. When a ringing mobile phone was not answered quickly, passengers would stare at the phone as if to encourage the owner to answer. Another field study revealed that co-located pairs, where one person was speaking on the mobile phone, also exhibited patterns of behavior, where the excluded person felt awkward, pretended not to listen, or openly listened in on the conversation (Humphreys, 2005). These studies of public mobile use offer an important insight: use of the mobile in public brings surrounding listeners into the conversation (an aspect of mobile interaction further discussed in Wei, 2006). The mobility afforded by the cell phone draws others into the act of the phone call.

Besides the mobility it affords, the mobile phone is distinguished from other communication technologies because of its intimate relationship with the user. This intimate connection facilitates the cyborg relationship users develop with mobile

phones. Often this relationship is literally close when the phone is kept nearby or tucked into a pocket. The ready availability of the mobile allows family and friends to always be “on call” and “on hand”: mobile users literally carry their social networks with them as entries in the phonebook, and they can connect with loved ones at any time. This phenomenon of being constantly connected and plugged into a social network has been labeled in different ways, each with its own nuance including “absent presence” (Gergen, 2002), “connected presence” (Licoppe, 2004), and “perpetual contact” (Katz & Aakhus, 2002). Gergen’s (2002) “absent presence” describes how someone can be physically present in one place but mentally transported to the world of a telephone conversation. Private “inside space” is created between callers, one that shifts as the user talks to different people. In that sense, everyone is equally available and close in a phone network, whether it is one’s mother or a telemarketer: the intimacy of the social connection is defined by the inside space of the conversation.

Licoppe’s (2004) “connected presence” suggests that people maintain relationships through a complex web of co-present and mediated communication, where the distinction between presence and absence of a loved one is blurred because he or she is always available through some means. Katz and Aakhus (2002) call the phenomenon of constant connection “perpetual contact,” the driver of their theory of *Apparatgeist*, where the mobile is a machine imbued with a spirit that motivates its use and reception by people. Perpetual contact demonstrates how the mobile phone is

so integrated into life that it is invisible and seamless; it is functionally like a nearly automatic connection between one person and another.

Taken together, absent presence, connected presence, and perpetual contact illustrate how mobile phone users can engage with their personal relationships in a cyborg manner. By virtue of the constant connection afforded by the mobile phone, social networks become like an extension of self in that they are always available. With mobiles, even if people are physically apart, they can instantly occupy the same “inside space” with a call. These theories are crucial for understanding how mobiles and other mediated technologies create liminal spaces and support cyborg thinking about mobiles and relationships. In this dissertation, “perpetual contact” is used as a cover term to evoke the three concepts in concert.

The mobile changes the definition of inside and outside, as well as private and public. The mobile creates a floating, mutable “inside space” where the parties to a phone call are “in” for that moment, and those who are not in the conversation are “out” (Gergen, 2002). An example of this shifting inside space is the mobile family distributed all over the world. Even though the family does not physically live together, they can be “at home” when they talk on the phone. Similarly, de Gournay (2002) argues that callers can now bypass traditional forms of authority to directly dial someone, expanding the private sphere in terms of who can be an intimate. But because mobiles facilitate dyadic rather than group discourse, they also shrink the public sphere. Thus incorporating mobile phones into one’s communications repertoire allows people to define for themselves what is home or inside or private.

Besides changing who one can call an intimate or a “close” friend, the mobile changes the manner that people connect with one another as well. Mobile communication creates stark links between people rather than supporting “true interaction” because the strong turn-taking style of phone conversation does not encourage the discursive storytelling that occurs face-to-face (de Gournay, 2002). This fundamental change in interaction style implies mobile phone communication ties disparate people together rather than supporting whole group interaction. Mobiles link together dispersed networks, a boon for people who are physically separated from their loved ones. In this case, the inside space of the group is no longer the physical space that it occupies, but the individual inside spaces that are created between paired connections.

These theories related to the shifting of inside or private space are akin to the third spaces and borderlands described in hybridity theory. They explain how mobiles facilitate the building of these transitional spaces that support users’ relationships. These spaces not only afford communication, but they create a liminal space for two people communicating by mobile phone to occupy in that moment and to be inside together. For people who are physically separated, this shared space can bring them closer together. This notion of inside space is revisited in the Bangalore study as a way to understand the intimacy shared by romantic partners through mobile phones.

Several studies among youth have found that mobile phones are used to strengthen personal relationships and make them more intimate. Mobiles have been integrated into social rituals of friends in completely novel ways. For example,

sharing the mobile phone can signify group membership among youth (Weilenmann & Larsson, 2001; Taylor & Harper, 2003). Communication over the mobile phone can also be used to create and maintain intimacy such as young people text messaging with their peers (Thurlow, 2003; Ito & Okabe, 2004). Some of this text messaging falls under “meaningless” mobile chatter, where callers have no real instrumental purpose in calling or texting other than to cement social bonds (Johnsen, 2003). Young people judge relationships sustained by both mobile phones and face-to-face interactions to be more intimate than those that are only face-to-face (Igarashi et al., 2005). This strengthened relationship is facilitated by constant availability of the mobile, particularly through text messaging which is highly accessible because it is affordable, quick, and silent, making it suitable for communication in class or after bedtime (Grinter & Eldridge, 2001). The mobile phone is profoundly integrated into the social rituals of Japanese teens, with some saying they cannot live without their phone (Kamibeppu & Sugiura, 2005). As a whole, these studies suggest that the mobile phone changes how people interact with their friends by allowing more frequent contact, even if purposeless: the increased communication creates closeness and intimacy.

Mobile phone use has also been studied from the perspective of the family and household. As noted by Haddon (2003), the concept of domestication, which had previously been applied to in-home, stationary technologies, can also be applied to mobile phones. Technology adoption is not a single decision made by a single person but an iterative process that incorporates the actions and feedback of the entire

household in order to make the technology relevant to that family. Further, the range of technology available to a household can be considered as an ecology or “communications repertoire” (Haddon & Vincent, 2005). One study of couples based on data from 1998 through 2001 found that personal communication technology was used on a household-level, that is, a man’s use of mobile phones was likely to encourage his wife to use them as well at a later point (Chesley, 2006). This influence was not found to be true with email or the internet. Household use and adoption of the mobile phone can be interpreted as the mobile serving family communication needs in a way that is not served by the computer. To be in perpetual contact, all family members need their own mobile phone so that they can reach and be reached at all times. The family and household is thus a relevant frame for the adoption and integration of the mobile phone into personal lives, particularly in the context of countries like Uzbekistan and India where families are tightly knit.

Mobile phone use between family members is different than with other kinds of people. Affection or physical barriers, e.g., someone sick at home, motivate users to talk on the mobile with their immediate family, whereas instrumental purposes drive talking on the mobile with business colleagues (Leung & Wei, 2000). And it has also been observed that mobile phones can strengthen bonds within a family and facilitate “symbolic proximity” to loved ones (Wei & Lo, 2006). The mobile phone can, however, be a contested space and used to negotiate boundaries between parents and children. In Williams and Williams’ study (2005) of parents and children, negotiation of curfew was stretched outside the home, where a child with a mobile

might be able to stay out later by virtue of the device. The mobile phone allowed children to feel independent, while parents felt they had more authority and control even when the children were out of sight. Ribak (2006) also found that mobile phones changed the relationship between parents and children: the mobile became like a teddy bear that comforts both children and their parents in times of separation by providing a measure of security. These studies about family communication suggest mobile phones fit well into these affectionate relationships. They strengthen loving ties between family members by making them feel symbolically close. And mobile phones provide ease of mind for parents and a measure of independence for their children.

As a whole, these studies about mobile phones and personal relationships reveal several themes that are central to the studies conducted in Tashkent and Bangalore. First, mobile phones change how users relate to others. These changes range from the inclusion of surrounding listeners into mobile conversation to perpetual contact to the changing notions of private and inside. When filtered through the lens of hybridity and cyborg theory, these unique characteristics of mobile use are the foundation for the proposed theory of mobile hybridity. They suggest how mobile phones might be a special tool that suits culturally blended worlds. The second theme is the closer, more frequent contact mobile users have with friends. Physically separated friends are networked through the phone, like links in a chain. Physically proximate friends become more intimate because the mobile supplements face-to-face interactions and because meanings may develop around the device itself, such as

through sharing it. Third, families use mobile phones to create symbolically proximate and caring relationships over mobile phones with each other. Mobile phones are integrated into repertoires by family units. The change in relationships between friends and family can be seen as the result of cyborg use of mobile phones. The phone is an extension of the user, and the personal relationships are an extension of the phone. These members are woven together into a distributed web—perpetually connected.

2.4.3 Supporting Romantic Relationships with Mobile Phones

The intimate fit of the mobile phone with the hand and its constant presence with the user make it an apt symbol for romantic feelings. And beyond any symbolism, mobile phones have been integrated by lovers in both developed and digitally emergent settings into their romantic routines. This literature review highlights the instrumental ways that mobile phones support romantic relationships. And with the presentation of the literature, the compelling connection of mobiles and romantic purposes is articulated. The studies reviewed here focus on mobiles as part of a genealogy of romantic behavior, including teenagers circumventing parents. The role of the mobile phone at several stages of romance including searching, courtship, and relationship nurturing is also discussed. And finally, emotional feelings centered on phones, and new mobile dating applications are discussed.

Most of the mobile phone use that supports romantic relationships is an organic extension of pre-mobile behaviors. For example, teenagers exchange daily good-morning and good-night text messages with their sweethearts (Kasesniemi &

Rautiainen, 2002; Taylor & Harper, 2003; Licoppe, 2004). These text messages evolved from the good-night chat that might have occurred on fixed-line telephones in an earlier era, demonstrating shifts from voice to text and briefer, but more frequent, contact. These natural connections with previous fixed-line behavior help integrate the mobile phone into the communications repertoire of a romantic relationship.

However, the distinctions between mobile phones and fixed-line telephones also motivate teenagers to use them for their romantic purposes. Henderson, Taylor and Thomson (2002) made a qualitative study of young British people and found the mobile phone was used in subversive ways. One girl used her pre-paid mobile to have a “private life” with her boyfriend—an important transition given that the relationship would have been forbidden otherwise. Mobiles were also part of a repertoire of communication where an internet relationship may unfurl into a mobile phone one—in which case, giving out a family landline number would be a very serious gesture indicating a milestone in the relationship. Also, one teenager reported routine three-hour calls in the evening with her boyfriend (free on her mobile plan), which would probably have been a problematic and expensive habit on a family landline.

The mobile has been used to support romantic relationships at all phases. Mobile phones can be instrumental tools for men to attract a mate. A University of Liverpool study found that men in mixed-gender company at a bar may use their mobile phones to “lek” or compete with other men for female attention for courtship purposes (Lycett & Dunbar, 2000). Researchers at Sheffield Hallam University and

Virgin Mobile similarly found that British men feel that women find them more desirable if their mobiles are technically more sophisticated (Men Use Phones, 2006). Men may prominently display their phones to suggest power or prestige and otherwise show off their overall attractiveness and fitness as a mate.

Mobile phones also make it easier to express romantic interest or to ask people out on dates, especially via text messaging. The lean nature and asynchronicity of text make initiating a relationship emotionally less risky. A recent study found that women are more likely to initiate a “first move” with a text message rather than a telephone call: SMS, a lean medium with few cues, may make women feel more secure when initiating contact, especially since they are not traditionally expected to be the pursuer (Byrne & Findlay, 2004). Texting is also considered a harmless, emotionally casual way to flirt (Ben-Ze'ev, 2004). Like internet users who create an online identity, texters also create an embodied identity that makes it easier to ask someone out on a date. The direct connection that mobile phones afford to intimate spaces, bypassing any filter or protective layer, may feel too personal for a single who wants to be reachable but may not wish to give a stranger direct access to her mobile number and life, a problem documented in the popular press (e.g., Grossman, 2006). Texting is thus a soft way to give a virtual stranger access to a mobile phone number and the intimate, personal world it represents without feeling overly exposed.

Once initiated, romantic relationships continue to be supported through mobile phones. Dietmar (2005) found that increased physical distance between a couple made the need for mobility more urgent: the phone created a perception of

constant connection, and reachability became an important factor. Couples chose their communications repertoire in holistic consideration of their personal preferences, need for mobility, and cost. Couples who were more securely attached to their partners communicated more openly on the telephone and shared feelings more frequently over SMS. In addition, they sought to have balanced amounts of communication with one another, reflecting the fairness and balance of the relationship itself. Sarch (1993) found that fixed-line phone use also reflected the state of a relationship, with women having comfortable telephone conversations with men with whom they had a good relationship. Women in uncertain and unsure relationships agonized over when and how often they should call. And besides supporting a couple's relationship, mobile phones can also work against them by facilitating cheating and deception, with entire affairs being conducted through flirty text messages and furtive phone calls (Ellwood-Clayton, 2006b).

As a whole, the literature about mobile phones supporting romantic relationships focuses on the device as a platform for expressing emotion to people. But people can also have feelings about the phone itself because of the value that information exchange and communication with loved ones can imbue the device (Vincent, 2003). Mobile phone users feel secure because others are always present by virtue of perpetual contact, and thus they depend on their phone for that connection. The closeness that one feels with a mobile phone, in turn, can help other intimate relationships to blossom, like the phenomenon of textmates in the Philippines. These textmate relationships can either be interlaced with an embodied romance or operate

as detached, standalone relationships (Pertierra, 2005; Ellwood-Clayton, 2006a). Such text relationships can become highly intimate quickly, allowing participants to share confidences or to engage in “sex text” (Pertierra, 2005). Text messages can be surprisingly embodied, allowing users to construct their femininity and masculinity with wordplay in their text-message “love-projects” (Prøitz, 2005a). Further, text communication can construct a relationship that may be even more intimate than the embodied relationship, e.g., when lovers use SMS to consciously self-report activities (Prøitz, 2005b). In other words, the mobile phone dovetails well with the work of romance, allowing people to closely connect with loved ones whom they know in the flesh as well as those people whom they know as digital constructions. Users keep their mobile close and use it as a medium for sharing the most personal parts of themselves with their loved one.

Technologists and the business world have not missed the opportunities created by the intersection of mobility and romance, the enthusiasm manifesting in SMS flirting events, mobile dating services, and Indian matrimonial services (Srivastava, 2005). Some of these new applications are mobile social software (or “MoSoSo”) that support social networks, taking advantage of the mobility of users and connecting people based on criteria like physical proximity or interests. These mobile social software are not just portable versions of existing Web sites or technology. They facilitate opportunistic matchmaking (romantic and otherwise) that is geographically and time sensitive, important qualities for mobile people who may be anywhere. Such software is ideal for people who are on the go, e.g., backpackers

who want to exchange information with travelers who are close by (Axup, Viller, MacColl, & Cooper, 2006). A prototype project designed for computer networks, Yenta, exhibited the spirit of such matching: it identified people with similar interests and made introductions whenever there was a good match even if users were “lurking” and not actively seeking a match (Foner, 1997).

Commercially available products include Dodgeball¹ which lets people alert their physically proximate friend networks, for example, if they wish to spontaneously gather at a bar. Txtmob² allows users to communicate via SMS with private or public communities and was used to coordinate protests at the 2004 Democratic National Convention in Boston and the Republican National Convention in New York (Hirsch & Henry, 2005). In the romantic sphere, mobile dating and matrimonial services are available from Match.com³, India Times⁴, Yahoo! India⁵, and MobiDating⁶ though these services primarily recreate the online personal ads experience on the mobile, that is, they do not have the same kind of physically proximate matching capabilities as the mobile social software projects. However, in China, “mobile romance” services that allow users to specify criteria for dates and alert them via text message when a match is nearby are already prevalent (Wong, 2006).

¹ <http://www.dodgeball.com/>

² <http://www.txtmob.com/>

³ <http://mobile.match.com/>

⁴ <http://sms.indiatimes.com/mobile/dating.html>

⁵ <http://in.mobile.yahoo.com/new/dating/>

⁶ <http://www.mobi-dating.net/>

These studies about romantic uses of the mobile reveal some key themes that are crucial to the Bangalore study. First, mobile romantic behaviors are both “old” and “new.” They are offshoots of old urges such as attracting a mate or supporting teenage circumvention of parents. But they are also novel behaviors that could not have been supported so well with other applications. For example, the closeness that frequent text messages can create in a relationship is only possible because of ease of access to the mobile. Second, emotional feelings center on the mobile phone itself because of the connection that is afforded to loved ones. The intimacy of the mobile phone with users supports romantic uses of the mobile phones, where it feels organic to engage in sex text or for physically separated couples to be reachable at all times to approximate closeness. The perpetual contact and creation of inside space discussed earlier fuel the compelling connection of mobiles to romantic activities.

2.4.4 Hybridity and Mobile Phones

The constant presence and perpetual contact supported by the mobile phone create liminal spaces and blur boundaries. The mobile symbolizes a constant connection with friends and family and problematizes what is “private” since the mobile user is never alone if only a phone call away. Researchers are beginning to holistically interpret the mobile as a site of “collision” of boundary blurs, local/global forces, and utopia/dystopia (May & Hearn, 2005). This section reviews the literature concerning the blended spaces that are created through mobile use. In describing the borderlands created by mobility, the literature illustrates how the mobile helps users negotiate multiple categories and identities and express their hybrid selves. Three

main themes are discussed: the distinction between private and public space, the blurring of lines that separate personal space from other spheres, and the expression of cultural identity.

The mobile literature emphasizes the intersection of private and public space because the mobile phone takes what was once an indoor activity—fixed-line telephony—and moves it to nearly any space the user chooses. The unclear delimitation between private and public is one of the chief themes of hybridity associated with the device. Most mobile studies cite the ability of users to engage in conversation wherever they choose, e.g., Cooper (2001), who highlights the mobile as a mixture of public and private technology. At the simplest level, the dynamic of public and private may be observed as private conversation in public space. People talking loudly on their mobiles in public are a familiar sight worldwide (e.g., Murtagh, 2001; Yu & Tng, 2003; Monk, Carroll, et al., 2004). The intrusion of private conversation in public space is causing a backlash: loud talking, loud phone ringing, and “discourteous” use of the mobile were frequently mentioned complaints in a study based in Hong Kong (Wei & Leung, 1999). That study observed that because public and private uses of the mobile are blended, determining how government should, if at all, regulate “public” use of mobiles becomes difficult because they are still “private” conversations. So mobile phone use in public provides insight on how mobiles blur two formerly distinct spheres and cause society to re-define norms of mobile use.

Researchers have studied and theorized about the problematic nature of public mobile use. Some have theorized how public mobile conversations offer strangers an incongruous glimpse into intimate lives (Persson, 2001; de Gournay, 2002). The one-sided nature of an overheard mobile phone conversation also feels too unnatural to ignore (Monk, Fellas, et al., 2004). The uncertainty of how surrounding listeners should be involved in these public conversations is compounded as they are inadvertently brought into the mutable “inside” space of mobile conversation that was described by Gergen (2002). De Gournay (2002) also discusses the shifting boundaries of private and public in France, where previously intimate conversations related to domesticity are now expressed in collective, public space. The “decompartmentalization” of public and private spheres in France has caused personal fulfillment to be as important as traditionally valued, public measures of success such as career or transmission of cultural heritage. These studies imply that the blending of public and private affects how people relate to others as well as how they judge themselves. Use of the mobile in public space is an emotionally charged phenomenon; it is also a prompt for re-evaluating what is thought of as inside or outside, personal or social, private or public.

A similarly nuanced discussion of the melding of public and private can be found in studies of teenagers’ mobile use. For teens, a private setting like the home may not afford the most privacy; public spaces may be far more private. In Japan, homes are quite small, and teens often have the most privacy from their families out in the streets or at the malls (Ito & Okabe, 2003). Other studies of teens have found

increased privacy when they are communicating with friends on mobile phones because it is a personal line rather than the family line (Ling & Yttri, 2002; Kasesniemi & Rautiainen, 2002; Taylor & Harper, 2003). These studies show how on a mobile, teenagers may text in silence or talk outside the home: teens can control when, where, and how they use the mobile for complete privacy from their families. Paradoxically, teens who desire privacy from their parents may be quite willing to share their text messages with a large circle of friends. This willingness to be open depends on the social context and suggests how privacy is as much about withholding information from certain groups as it is keeping information to oneself. And for that reason, teenagers may find the most privacy in a highly open place where anyone, except family, can overhear.

The blending of public and private spaces relates to whether the mobile is regarded as a personal or group communication device. Teens, as noted earlier, consider the mobile phone as a personal device that stretches beyond the boundaries of home and family. And yet, they have also been observed sharing their mobiles with friends, sometimes so seamlessly that it is unclear to the outside observer who actually owns the phone (Weilenmann & Larsson, 2001; Taylor & Harper, 2003). Other studies have shown how users strongly identify with the mobile phone as a kind of friend or even an extension of self, but the mobile is valued for facilitating contact with friends and family (Gant & Kiesler, 2001; Oksman & Rautiainen, 2003). Like other kinds of social software or groupware, the mobile phone is useless if maintained as a completely private, personal, unconnected object. The mobile is popularly

conceptualized as a personal device but must be used in a public, group manner to benefit from perpetual contact. In that way, the mobile is a hybrid device used in a manner that blends previously discrete spheres of private and public.

A second theme of mobile hybridity is the boundary blur that occurs between personal space and other spheres. De Gournay (2002) describes how the mobile affects “personal life” rather than social or professional lives: the mobile follows users throughout their day and affects all aspects of their routine rather than a single sphere such as work or home. It affects their internal, personal lives. The shrinking border between personal lives and the demands of the rest of the world is often expressed as the blending of work and home. Gant and Kiesler (2001) found that portable phone (similar to a mobile phone) users in a 1993 study were both appreciative of and frustrated by the blurring lines between personal and office life. Users were pleased to respond to urgent calls from home regardless of where they were, but work calls at home were an intrusion. Notably, some users felt uncomfortable having a single phone number to give for business and family, suggesting they did not like erasing all boundaries and simply being “available,” particularly with respect to restricting work calls to business hours.

The blurring of boundaries between home and work is attributable to mobile communication technology rather than the computer (Chesley, 2005). The blurred boundaries resulted in home life negatively spilling into work for women who are traditionally in charge of domestic space, and work life negatively spilling over into home life for both men and women, eroding family satisfaction. These two studies

suggest that mobile phone users have mixed feelings about the blurring of home and work.

The discomfort surrounding the blurring boundaries of work and home may be less apparent in the upcoming generation of young people who do not remember life in the pre-mobile era. They are accustomed to the perpetual contact afforded by the mobile and have developed behaviors to cope with it. The expectation of constant connection via mobile phone has created the teenage norm of quickly replying to text messages. Failure to send an instant reply risks social trouble, such as being dropped from future text messaging, and it can be a purposeful indication of displeasure (Grinter & Eldridge, 2001; Ling & Yttri, 2002; Kasesniemi & Rautiainen, 2002; Taylor & Harper, 2003; Ito & Okabe, 2003; Kamibeppu & Sugiura, 2005). But even with such ease with the technology and development of norms, a measure of apprehension is associated with constant connection, such as the anxiety to answer text messages immediately. The perpetual contact between self and others supported by mobile phones may be appreciated even while it may cause feelings of being cramped.

Mobile phones are absorbed into everyday activities, blurring the lines of personal space. They have deeply integrated themselves with users' world views and bodies, providing support for the incorporating effect of cyborg theory. Many users cannot imagine living without the mobile phone and have integrated the mobile into key parts of their lives including religion, what Bell (2006) has dubbed "techno-spiritual" practices. Studies of new users have found that users are often reluctant to

give up their mobile, implying that the phone insinuates itself into daily rituals and customs (Palen et al., 2001; Gant & Kiesler, 2001). New users may acquire the mobile phone for a specific purpose such as emergency contact, but then they find it indispensable for calling people whenever they like or freeing themselves from the desk or home phone (Palen et al., 2001). Even children and teens may see the mobile as an indispensable device or an extension of their bodies (Oksman & Rautiainen, 2003).

The blurring of lines between users and their mobile technologies becomes physically apparent as mobile phones and their accessories continue to shrink. It seems reasonable to expect that, in the not so distant future, mobile technologies could be implanted or become near invisible for the ultimate in communication convenience. In the event that people physically become cyborgs, conversations about the blending of human and machine will become even more relevant. At that point, the constant presence of the mobile phone will not be a joke or an addiction to technology but an accepted human need like clean water or nutritious food. Regardless, the perpetual contact afforded by mobile phones lends itself to the decreased distinction between personal space and other spheres, be it work, social connections, or the mobile phone itself.

A final theme to consider in a discussion of hybridity and mobile phones is use of the mobile to express and navigate culturally blended identities and spaces. An example of this type of use of the mobile can be found in Hong Kong, a bilingual and bicultural location, where young people write text messages in both Chinese and

English (Lin, 2005). The mobile is an excellent medium for Hong Kongers to express their in-between state and fluid cultural identities by mixing Chinese and English in text messages. Less explicit markers of cultural hybridity than language may also be negotiated through the mobile phone. In Korea, mobile phones are considered harbingers of globalization that threaten to isolate users from traditional, local forms of relationships, yet Yoon (2003) found that teenagers used the mobile to rearticulate and re-imagine local ways of being. In his study, teenagers used the mobile phone to express traditional *Cheong* relationships, a kind of empathetic, affective connection that Koreans have with their core social networks of family and close friends. These young people used the mobile to strengthen relationships by maintaining contact with those with whom they would have otherwise lost touch or with whom they never would have communicated. Relationships were further strengthened in that they used the mobile to arrange face-to-face meetings. The teenagers were exposed to global media and mobile technology that threatened to uproot them from social networks, but in fact they used the phone in ways that were in keeping with traditional values.

In a follow-up analysis, Yoon (2006) theorized that re-articulation of traditional relationships through mobile phone use not only reflects internalized values but also negotiates them. An example of this negotiation is use of the mobile phone to navigate social hierarchies of age. The Confucian principles of respect call for younger people to be polite towards elders. It also creates a power distance where people do not often mingle across generations. However, the mobile phone creates new situations, where senior students may call junior students to the point of

bothering them. Further, generational conflicts now exist over whether it is the young or old people who are using mobiles inappropriately (e.g., young people think the old people use their phones too loudly). This group-oriented thinking suggests a collective mentality that negates perceptions of the mobile as an individuating force. So although mobile phones create new situations and liminal spaces, they may offer opportunities for users to negotiate these in-between spaces as they reinforce traditional generational boundaries.

These in-between spaces have been framed by Hjorth (2003) as *ma*, a Japanese concept referring to meaningful white space between words. She characterizes the ambiguity and ubiquity of the white space as a way to understand the links between Japanese cute culture and mobile phones, represented in the trend of hanging cute character dolls on mobile phones. Rather than being an empty fad, the habit is rich with symbolism for Japanese lesbian culture: by hanging Hello Kitty on their phones, lesbians are appropriating a childish figure to represent girl friendships. The alignment of cute with sexual creates an ambiguous space, where the childish can be disconcertingly asexual and sexualized (like the Lolita complex). Given that these shifts and openings in meaning are more prevalent with globalization and new contacts between cultures, close examination of connections and fusions in liminal spaces created by and expressed through mobile phones becomes an increasing necessity. These blurs of space create new ways of negotiating identity and new opportunities for self-expression.

As a whole, these studies of hybridity and mobile phones revealed three central themes that inform mobile hybridity theory. First, the constant presence and perpetual contact of mobile phones blur previous distinctions between public and private spaces in nuanced ways. For example, teenagers may find public use of mobiles to offer more privacy than using them at home. Second, mobile phones blend distinctions between personal space and other spheres. Mobile phone users' lives become more mixed-up as they become closer to others and to the device itself. Third, mobiles create liminal cultural spaces as they also provide tools for bridging them. The mobile can be a tool for expressing culturally blended identities and allows users to negotiate changing relationships and changing spaces in ways reflective of their local sensibilities.

The body of literature that was presented about mobile phone use creates context for the mobile phone use that is reported in Tashkent and Bangalore. The themes that were identified relating to digitally emergent spaces, personal and romantic relationships, boundary blur, and culturally blended identities are central components of the two studies in this project. The mobile phone, when considered as part of a web of communication technologies, affords perpetual contact between users and their social networks. It profoundly alters the way people live and think with respect to their loved ones. In addition, the mobile phone blurs categories and blends identities for users because it is a pervasive technology that fits well with many aspects of life. This ability to hybridize previously discrete spheres emphasizes the

transformative powers of the mobile phone: the mobile phone is not simply a gadget or productivity tool.

Mobile phones create transitional moments for users even as they act as a tool for navigating these liminal spaces. For example, mobile phones allow teenagers to cut out parents from their love life, even as they give peace of mind to parents when their children go out at night. These transitions are in part created by the cyborg integration of mobiles into personal lives: when mobiles are treated as an extension of self, social networks also become portable appendages. In that way, mobile phone users carry with them their loved ones wherever they go. And the mobile phone accompanies users whenever they enter the worlds that are most important to them such as home, work, church, or social spaces.

This close, intimate use of mobile phones in the context of digitally emergent, post-colonial spaces provides an avenue for articulating a new theory of mobile hybridity. Global and historical forces fracture and shift the cultural landscape, causing changes in local attitudes and breaking apart families as people leave home for work or education. The changes in social attitudes combined with social migrations threaten how people maintain their personal and romantic relationships. To successfully negotiate these spaces and fuse them together, young, urban, middle-class people have adopted hybrid, cyborg patterns of mobile phone use. These patterns of use are explored in Chapters 3 and 4 in the Tashkent and Bangalore studies.

Chapter 3: Mobiles for Supporting Personal Relationships in Tashkent

As a first step towards crafting a theory of mobile hybridity, this chapter presents a study conducted in Tashkent, Uzbekistan, a newly independent state in Central Asia that is experiencing growing mobile phone use. The purpose of this study is to consider how urban, middle-class people use mobile phones to support their personal relationships, and in the process, to provide some initial support for the strength of the hybridity and cyborg frame.

Chapter 2 reported key themes that inform this study, particularly those related to mobile phone use in digitally emergent settings, and CMC and mobile phone use that support personal relationships. The literature suggested that members of digitally emergent societies often use their mobile phones for non-instrumental purposes and invest the devices with emotional meaning. Further, mobile phone use affects personal relationships by changing how users relate to others. Given this context, this chapter describes how mobile phones exist as social tools within the communication infrastructure of Tashkent and identifies examples of mobile phone use that supports personal relationships. Although on the periphery of this study, computer use is also lightly described to contextualize mobile phone use within a larger ICT ecology.

Tashkent is the capital of Uzbekistan, and its largest, most developed, and most ethnically diverse city (see Figure 3.1 for a map). About 2 million people live in

the city (NationMaster, 2006), with perhaps even more undocumented residents who migrate from the surrounding rural area or smaller cities seeking economic opportunities. In the 15 years since independence, Uzbekistan, and especially Tashkent, has experienced remarkable transformations in the political, economic, and social arenas. Especially notable are the consumer choices that were previously unavailable. Residents of the former Soviet state now have access to luxury goods and international brands like Nokia, Benetton, the InterContinental, and Levi jeans. The availability of these goods (at least to the wealthy) in this former communist state indicates the progress and change that is seizing the country.



Figure 3.1 Map of Uzbekistan (Courtesy of the University of Texas Libraries, the University of Texas at Austin)

Tashkent is clearly evolving and bearing witness to the compelling forces of Westernization and “modernization.” A visual survey of any major street in Tashkent is likely to reveal Western fashions and slick, colorful advertisements. Glass high-rises, often financed by joint ventures, regularly emerge throughout the city. But the

reforms and changes rippling through Uzbekistan are still “in progress.” To the Western eye, Tashkent feels like a throwback in time with the preponderance of Soviet-era buildings that were built following a major earthquake in 1966. The older cars on the street are of Russian provenance, adding to the vintage look. Figure 3.2 shows an example of the architecture and cars at an intersection in Tashkent. Further confusing the sense of time are the many people who wear traditional Uzbek clothing every day.



Figure 3.2 Major intersection in Tashkent

These markers of the past frame the activities of the people in the present, contributing to a hybrid space where people experienced first-hand the tidal shifts of history: a communist country shifting into a cosmopolitan society, within the scaffolding of Asian heritage and Muslim culture. Among urban, middle-class

Uzbeks, it is not uncommon to speak several languages, especially Uzbek, Russian, and English. In this environment of political and cultural transformations, burgeoning consumerism, and multiple languages, new media such as the internet and mobile phones are growing in popularity.

This chapter describes the mobile telecommunication infrastructure in Tashkent and how users make communication decisions based on the cultural, political, and technological context of the region. These circumstances create a picture of how mobiles are used to support personal relationships. As a byproduct, this study illustrates how social studies of mobile phone use in digitally emergent settings can enrich the predominantly industrialized, Western perspective that dominates the development, design, and study of mobile phones.

3.1 Problem Area

This study creates a snapshot of how the mobile phone is used to support personal relationships in Tashkent. It describes the ICT infrastructure of Tashkent, with emphasis on mobile phone services. Through examples of mobile phone use for supporting personal relationships, broader questions about how mobile phones change the way users relate to others are also addressed.

The study focuses on business people and young people living in Tashkent. This urban, middle-class population has the financial means and personal motivations for using mobile phones, and they are populations that have been studied in other countries for their mobile phone use. The people in this study are sufficiently

wealthy—either through personal income or parental support—to have a mobile phone, which is still a luxury in Uzbekistan. These are people who live comfortably and either have good jobs or aspirations of upward mobility.

These are people who have culturally blended identities, including linguistically. Many people speak a mother tongue with their family that reflects their ethnic background. But because of Soviet heritage and the practicalities of inter-ethnic communication, Russian is the working language of Tashkent. And with Uzbekistan gradually pulling away from Russia's sphere of influence, English has become an important language skill for those who aspire to work with international organizations.

Residents of Tashkent are also exposed to the forces of globalization, albeit in a fairly narrow form. Uzbek society is shielded from many international news events or consumer trends because of government censorship, a relatively limited range of imported products, and the absence of a 24 hour media culture. But nonetheless, the middle class is beginning to experience the pressures of traditional Uzbek culture intersecting, sometimes orthogonally, with Russian and international cultures. This disjuncture is arguably most obvious with expectations for Uzbek females. For example, girls are traditionally expected to stay at home and clean, but today, they have opportunities to attend university and work in business. Increased multicultural contact creates other liminal spaces and shifts in cultural expectations. In this variable landscape, the mobile phone becomes a critical tool for urban, middle class people to negotiate hybrid spaces and bridge gaps as they maintain their personal relationships.

3.2 Research Questions

The first research question in Chapter 1 addressed the issues of the Tashkent study:

- RQ1. How do urban, middle-class people in Tashkent use mobile phones to support their personal relationships?
- a. What mobile service infrastructure is available?
 - b. What is the cultural and political setting of mobile phone use?

In answering this research question, this study considers mobile phone use for the support of personal relationships in concert with the hybridity and cyborg theories. This analytical work contributes to the initial framing of a theory of mobile hybridity.

3.3 Literature Review

Uzbekistan has been redefining its economic, political, and cultural identity since the collapse of the Soviet Union. This literature review describes some of the changes that have occurred and illustrates how the amalgamation of the Soviet legacy with the traditional Asian and Muslim culture has created an environment that is distinctive from the West and that consequently influences mobile phone use.

Uzbekistan's economy is largely based on export of cotton and gold, while its industrial sector is poorly developed (Economist Intelligence Unit, 2006). International joint ventures are creating new commercial opportunities in Uzbekistan with desirable, high-paying jobs, but unemployment is still widespread. Partly in response to the under-employment, a large informal economy exists with many

people earning money privately, such as by driving their personal car as a taxi or importing goods on a small scale. These unofficial sources of income likely supplement the low average monthly salary of \$20-30 USD (Kolko et al., 2003). This salary is very little even with the low cost of living in Uzbekistan since most manufactured goods are imported and thus relatively expensive by local standards.

The Uzbek government is highly authoritarian, with power centered on the executive office of President Islam Karimov. Elections are ostensibly democratic, but they have been criticized by international organizations for being unfair, with the only candidate to run against Karimov announcing that he, too, had voted for him (Human Rights Watch, 2002). Accusations of human rights violations have dogged the regime, reportedly including boiling dissidents alive (The envoy, 2004).

The authoritarian Uzbek government tightly controls its image in the news media, which typically report only positive or non-controversial stories. The government's media control and refusal to allow international observers has led to confused reporting of important stories such as the violence in Andijon in the Ferghana Valley in 2005. It is still unclear whether a few dozen or hundreds of people were killed during the event or whether the victims were peaceful protesters or Islamic militants—the details change depending on the storyteller (Saidazimova, 2006). Media policing has caused the common practice of self-censorship or intentional avoidance of sensitive topics. With this atmosphere on top of the old Soviet habit of stifling dissent, most Uzbeks are fairly cautious about expressing their political views in mixed company.

The information infrastructure in Uzbekistan is still redefining itself in the wake of independence, with electronic resources and digital media slowly supplementing the traditional social networks and print-based information sources. Uzbek culture values family ties and personal relationships; many Uzbeks live with extended family (Zanca, 2002). In addition to the cultural emphasis on family, Uzbeks traditionally rely on social networks of reciprocity for information, personal favors, jobs, and consumer goods: the people whom one knows are an important avenue to information, assistance, and goods (Kandiyoti, 1998; Stevens, 1998). The neighborhood (*mahalla*) has typically been a proximate community for these social networks in addition to being a kind of homeowners' association with administrative powers (Sievers, 2002). Such patterns of information seeking and goods acquisition were vital for survival in the Soviet era when consumer resources were scarce and personal relationships were the key to getting access to privileged information or special opportunities.

The region has a rich mix of cultures, ethnicities, and languages. Uzbekistan is predominantly Uzbek ethnicity, with minorities such as Russians, Tajiks, Kazakhs, Tatars, and Koreans. By far, the most common language is Uzbek, but Russian is a widely spoken native or second language, particularly in large cities. In different regions of Uzbekistan, other languages are also spoken such as Tajik in Samarkand and Bukhara. Individuals with facility in more than one language are the norm in large cities and ethnically diverse areas like Tashkent. To contextualize the feat of mastering multiple languages, it should be noted that the three major languages of

Uzbek, Russian, and Tajik are from completely different language families (Turkic, Slavic, and Farsi, respectively) that are distinct from one another aside from the borrowed words and grammatical influences that have permeated the languages from close contact with each other.

Language is a politically sensitive issue in Uzbekistan. During Soviet times, Russian was encouraged (although never made an official state language) to aid in the formation of a unified Soviet culture and identity; there were also practical benefits to using Russian such as the ability to communicate with other member countries of the Soviet Union (Schlyter, 2003). Russian became a “career language,” an important skill for people seeking higher education, international work, or government jobs. Unlike in Kazakhstan, where the native language of Kazakh substantially dropped off under Soviet influence, Uzbek remained a commonly spoken language, while Russian became the privileged language of the government elite, international business people, and the intelligentsia.

Around independence, the Uzbek government passed a number of laws related to language to build up an independent Uzbek culture. A state language law was put in effect in 1989, making Uzbek the official state language (Smith, Law, Wilson, Bohr, & Allworth, 1998). Furthermore, government workers were required to be able to perform their jobs in Uzbek. The effect of this law was to raise the status of Uzbek language as well as ethnic Uzbeks, the primary speakers of the language. Uzbekistan passed another law in 1993 to convert the alphabet from Cyrillic script to Latin, indicating a distancing from Russia, a new openness towards the West, and increased

compatibility of Uzbek language with computer programs (Landau & Kellner-Heinkele, 2001). The result of these language reforms is a political climate where it is advantageous to speak and write Uzbek, yet where many adults are accustomed to using Russian in a professional setting. Complicating the situation is the upcoming generation of teenagers and youth who have been formally schooled in Uzbek and for whom Russian is a non-native language.

Coupled with this rich cultural, linguistic, and political heritage, Uzbekistan is a productive region to study the use of ICT because of its maturing digital infrastructure. There are relatively few telephone lines in Uzbekistan with only 7.96 telephone subscribers per 100 people in 2005 (International Telecommunication Union, 2007). In other words, not every home or even village has a phone, and phone lines are concentrated in urban areas such as Tashkent. In contrast, the United States is highly saturated with 122.71 telephone subscribers per 100 people in 2005 (International Telecommunication Union, 2007). Many phones, including in Tashkent, are analog lines with poor sound quality and unreliable connections. The public pay phones often look doubtful, and they require special tokens that must be purchased from a shop (Figure 3.3 shows an example of a pay phone).



Figure 3.3 Public pay phone in Tashkent

The internet infrastructure in Uzbekistan is similarly in its early stages. Internet services are found in urban areas in cybercafés, businesses, and homes, but access becomes more challenging in rural areas. Figure 3.4 shows a cybercafé in Tashkent. Official estimates suggest that less than three percent of the population uses the internet (Ferghana.ru, 2005a). Relatively few Uzbekistan-hosted Web sites are available: about 700 active Web sites are estimated to be in the .uz domain (Ferghana.ru, 2005b), and there are also many sites available in Russian from other Russophone countries (Wei, 2004; Wei & Kolko, 2005a). Internet use is still growing, but as the small number of .uz Web sites imply, resources relevant to people in Uzbekistan may be somewhat limited.

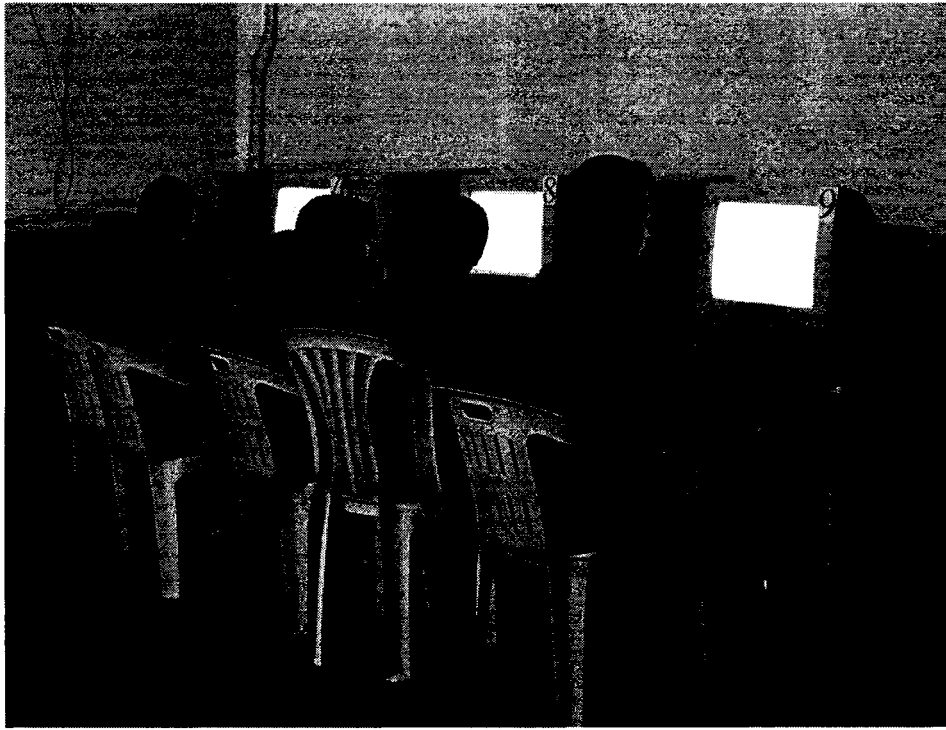


Figure 3.4 Customers using computers at a Tashkent cybercafé

Partially because of the poor quality of landlines and the challenges of finding working payphones, mobile phones are a popular choice for wealthy people both as a necessity and a status symbol. Mobile phone use has been growing incredibly quickly, spiking from 53,100 mobile lines in 2000 to 720,000 in 2005, but still covering less than 3 percent of the population (International Telecommunication Union, 2007). Recent official government statistics show that the number of mobile phone users in Uzbekistan has increased more rapidly than internet users; however, there are still fewer mobile users than internet users (Ferghana.ru, 2005a). Mobile phones, like fixed-line phones, are concentrated in urban areas because of the geographic distribution of the cell phone relay towers and the people who can afford them.

The limited yet growing spread of technology in Uzbekistan is similar to patterns of ICT adoption in other digitally emerging societies. Even when the technology is not yet pervasive, there is often popular interest in it. For example, in Russia, one study discovered that 40 percent of people who did not use computers were interested in them (Vershinskaya, 2003). Studying these early stages of adoption can teach researchers what works and what does not work in a mobile phone device and service design in an emergent population of users. These relatively new users can offer unusual insights because they are still contiguous with a life “before” the arrival of the mobile phone. Some of the users might have been introduced to mobiles only recently, or they are in close contact with unwired, rural areas.

Further information can be derived from cultural disjunctures that may be found in these digitally emergent societies, since text messaging and Wireless Application Protocol (WAP) were designed for use in industrialized cultures. Digitally emergent phone users may perceive and use non-voice mobile services in unexpected ways, a problem posed by Kolko (2002) as an opportunity to discover “moments of confusion, misunderstanding, and incomprehension that highlight places that the construction of technological artifacts presume cultural knowledge that does not exist” (p. 355). Studying a culture in which mobile phone use is still budding can renew the understanding of researchers in the West of how various facets of a society (e.g., culture, politics, and financial circumstances) interplay with technology.

3.4 Method

To explore the cultural issues of mobile phone use, a two-week qualitative study was conducted in March 2004 in Tashkent, Uzbekistan. Three primary research activities were chosen to provide a breadth of information about the mobile phone landscape in Tashkent. To assess the extent of technology and services available in Tashkent, representatives of local mobile service providers were approached for in-depth interviews about the services they provide. Interviews of mobile phone users and non-users were conducted to measure patterns of use and attitudes surrounding mobile phones. Observations in public areas were conducted to assess the public face of mobile phone use. They also provided a contextual understanding of how mobile phone users interact with the locations around them that is more effective and powerful than only learning about these behaviors in an interview cut off from the environment. (This rationale borrows from the “go-along” method described by Kusenbach, 2003.)

The qualitative approach of this study allowed for the generation of new theory (in contrast to the hypothesis testing of a classic experimental design). The rigorousness of this qualitative method was maintained with attention to the credibility, transferability, dependability, and confirmability described by Lincoln and Guba (1985), which parallel the conventional experimental criteria of internal validity, external validity, reliability, and objectivity. The credibility of the study was established by triangulating information from multiple sources, confirming or problematizing reports from individuals. Debriefing activities with the graduate

student research group attached to the project also supported the credibility of the study. The transferability of the study conclusions was supported by connecting findings to previous literature and interpreting their extensibility to other settings. Dependability and confirmability were supported by documenting the source data for each interpretation (such as participant quotations or field notes excerpts) so that the empirical rationale for each analysis and the researcher's thought process was clear. In this way, the qualitative study sought to be exploratory and generative while maintaining methodological rigor.

3.4.1 Participants

Two samples of participants were recruited for this study. The first sample consisted of representatives of mobile service providers who could provide background information about their companies' services and the mobile phone market. Four of the six mobile phone providers in Tashkent were contacted for interviews, and two executives from Coscom and Unitel agreed to be interviewed. Both executives were male. One representative spoke Russian, so an interpreter was used for the interview. The other spoke English professionally so an interpreter was not required.

The second sample focused on mobile phone users, but non-users were opportunistically included as well to get another view of mobile phones and mobile users in Uzbek society. These participants were recruited through a snowball sample of personal contacts. This sampling method was done for convenience because of the limited time in the field and for cultural reasons. This kind of sampling method has

been used by other researchers as well, especially in international settings (see Blom, Chipchase, & Lehtikoinen, 2003, for an example). Most Uzbeks are unfamiliar with being polled purely for informational or scholarly purposes and would likely be disinclined to participate in a study sponsored by an unknown party without an introduction. Such convenience samples are not representative of the population at large, but rather they magnify key issues within a narrow population of interest.

Two populations were targeted for these interviews: business people because they were perceived to have the greatest need and financial resources for mobile services, and young people (aged 18-21) because they are the focus of many studies of mobile phone use in Western Europe and East Asia. The young people were recruited at a local institute (college) for interviews. The institute is a private school where students are responsible for their own tuition (without scholarships) so they come from well-off families. Further, because the institute was not accredited in 2004 and did not award recognized diplomas, its students often took their coursework in parallel with enrollment at an accredited institute or university, suggesting they are driven and ambitious. Five of the young people owned a mobile phone, and four of them did not.

A total of twelve people were recruited, including three business people and nine young people. The participants were a mix of ethnicities. Most were Uzbek, but other ethnicities included Turkish, Korean, and Russian. Participants were almost all from Tashkent. All participants spoke English fluently, so there was no need for

interpreters or translators. Table 3.1 shows the demographic information of these users and non-users.

Table 3.1 Summary of participant demographics in Tashkent

ID	Gender	Age	Occupation	Mobile user?	Type of mobile phone	Mobile service provider
1	M	~ 35	joint venture manager	yes	Nokia	Coscom
2	M	~ 35	NGO worker	yes	Motorola	Daewoo Unitel
3	M	~ 25	NGO worker	yes	Nokia	Uzdunrobita
4	M	~ 20	student	yes	Motorola	Uzdunrobita
5	F	~ 20	student	yes	Samsung	Uzdunrobita
6	F	~ 20	student	yes	Siemens	Uzdunrobita
7	M	~ 20	student	yes	unknown	unknown
8	F	~ 20	student	yes	Samsung	Uzdunrobita
9	M	~ 20	student	yes	borrow's phone to play games	N/A
10	M	~ 20	student	yes	borrow's father's phone	N/A
11	M	~ 20	student	no	N/A	N/A
12	M	~ 20	student	no	N/A	N/A

3.4.2 Materials

Forms and scripts were prepared for recruiting volunteers and for the interviews. To recruit and inform volunteers, a study recruitment text and a consent form were created. The study recruitment text described general expectations of the study and the basic eligibility criteria to participate. The consent form explained the scope of the overall study and expectations of participants, as well as their rights to confidentiality and to decline to participate in any aspect of the study.

Separate scripts were created for the interviews with the mobile service providers and the mobile phone users and nonusers. The interview scripts were developed in a grounded theory approach based on observations in public spaces and

conversations with cultural informants about mobile phone use in Uzbekistan. They were further refined with each interview. The interview questions were open-ended to allow for flexibility in answers. Likewise, the scripts left room for exploring ideas that emerged in the interviews.

The interview script that was prepared for mobile service providers focused on the services offered by the company, the method of subscription, and upcoming projects. The script for the mobile phone users asked about motivations for acquiring and using mobiles, including why they got their phone, where they used it, and what they liked about it. The non-users were asked questions related to whether they wanted their own mobile phone and what they thought of mobiles.

3.4.3 Procedures

The following general procedure was used for the interviews of the mobile service providers and the mobile phone users and non-users. Before being interviewed, participants were asked to review and sign the consent form. A semi-structured format for both kinds of interviews was used, with questions modified or added depending on the topics that emerged. Participants were free to skip questions or to take breaks or to interrupt at any time. As participants answered the questions, the researcher would jot down notes in a notebook. Other aspects of the procedure were customized to the different participant samples.

The interviews with the mobile service providers occurred in their offices and were not audio recorded. These interviews sought to balance the needs of a research

activity with the familiarity of a business meeting to make participants feel at ease. Because of the competitive nature of the mobile phone business, these participants needed to be reassured that the information they provided was for research purposes. Each interview took about 30 minutes to complete.

The interviews of the business people who were mobile phone users took place at their offices. The interviews of the young people were conducted at their institute. Unlike in the interviews of the mobile service providers and the business people, the young people were interviewed in multiples except for one participant. The students were interviewed at least in pairs for their own comfort and so they could react to each other's answers. These interviews were digitally audio recorded. The interviews of single participants required about 30 minutes to complete; paired interviews required about 45 minutes.

The final data collection activity was observations of public mobile phone use. Observations focused on acts of mobile use and visually gauged the prevalence of mobile technology in many areas around Tashkent, from the city center to the outskirts. The types of locations that were observed included public transportation, bazaars, shopping areas, parks, restaurants, universities, and Navoi Street, the major electronics shopping district in Tashkent. Previous fieldwork in Tashkent suggested that mobile phone use would likely be found in these locations, and these types of sites are frequently the setting for mobile phone studies including Murtagh (2001) and Humphreys (2005). Navoi Street was included in the observations so that the nature of mobile phone businesses could be assessed. Besides noting mobile phone activities,

these observations also captured apparent demographic characteristics of the user and features of the environment such as noise level so that evidence of mobile phone use could be contextualized.

3.5 Results

The results from the observations and interviews now follow. Because the mobile phone market is fast-moving, as much as possible, the data collected from March 2004 about the competitive landscape of mobile phone service providers were updated to reflect today's situation. This update does not significantly affect what was observed in the field, other than to suggest that mobile phone use continues to steadily grow.

3.5.1 Mobile Landscape of Tashkent

The interviews with the two mobile providers and mobile phone users as well as informal conversations with cultural informants revealed a technical infrastructure and subscription model that is different from that in the U.S. A description of the way mobile services work in Tashkent enhances interpretation of how mobile phones are used.

The mobile market is highly competitive in Tashkent. In 2004 when the data was collected, six major mobile providers had to compete for relatively few customers. In order of market share from that period, the providers were Uzdunrobita (now operating as MTS), Unitel, Coscom, Perfectum, Buztel, and Uzmacom (Telegeography, 2004). Today, only four major mobile providers are operating in

Tashkent (MTS/Uzdunrobota, Unitel, Coscom, and Perfectum), with mergers and acquisitions reducing the number of competitors.

In 2004, each provider had a unique reputation that seemed commonly acknowledged by users such as good roaming service (Coscom), excellent customer service (Unitel), or cheap rates (Uzdunrobota). Uzdunrobota had the cheapest service, likely contributing to its top market share. Because Tashkent is such a competitive market, new services or providers are often test-launched in Samarkand, the second largest city in Uzbekistan, before being released in Tashkent. Mobile service is not widespread throughout the country. The urban areas have comprehensive service, but many rural areas in 2004 had yet to be integrated into a network.

Mobile users can acquire their handset in one of two ways. In Tashkent, consumers more commonly buy mobile phones at an independent shop, such as in Navoi Street, where they can bargain on the price and then go to a mobile provider's office to buy a SIM card and service plan. This method is often cheaper because of the bargaining, and more styles of handsets are available. The less common way to acquire a handset is to buy a phone and service package from an authorized agent of a mobile service provider. Figure 3.5 shows a storefront that offers Perfectum Mobile service, handset sales, and repairs. The preference for "customizing" the mobile phone purchase by choosing a handset and then a service provider begins to hint at the cyborg manner of crafting an identity. In this way, users are subverting the limited offering of phone and service packages and "designing" a mobile that better suits their needs. Choosing a phone is the first expression of a mobile identity.



Figure 3.5 Storefront for mobile phone sales, repairs, and service in Tashkent

In Navoi Street, an impressive range of mobile phones available for purchase is on display. Most phones for sale there seem imported through informal channels. Handsets branded with T-Mobile, Vodafone, and Piltel (none of which have operations in Uzbekistan) can be bought in the shops. The phones are informally brought into Uzbekistan from Russia, Turkey, United Arab Emirates, or Malaysia, so many of these phones have language support that is unintended for the Uzbek market. Because of the prevalence of foreign phones, interesting and unexplained culturally hybrid moments may occur such as an advertisement in Navoi Street in Russian language depicting Spiderman lurking behind a mobile phone with Arabic keypad (Figure 3.6).



Figure 3.6 Russian-language advertisement with Arabic mobile phone

The mobile phone's character or operating system language affects the user's ability to navigate through phone menus and write text for SMS or wireless Web browsing. The imported phones on Navoi Street often do not have comprehensive support for Cyrillic, the alphabet used for Russian and sometimes Uzbek. Depending on the origin of the phone, Cyrillic may be absent on the keypad, or the operating system may not support it. Writing a text message may require touch-typing style memorization of the keypad or a workaround such as typing Russian with Latin letters. These skills represent some of the negotiation that occurs of the third spaces

that form in the moment of contact between cultures. This hybrid style of texting offers a potent example of how mobile phone users simultaneously integrate new influences as they resist them, for example, by typing Russian with Latin letters rather than not writing at all.

Phones are expensive relative to the average monthly salary. New phones start at \$100 USD for a basic model, but used phones are available for \$50 USD. Very advanced phones are also available such as a Motorola with multimedia and WAP capability that cost about \$500 USD. Some people were observed in the street using brick-like phones that were probably circa 2000, but most people seemed to have fairly up-to-date phones. Decorative accessories such as charms, neckstraps, protective covers, and carrying cases are also easily found in shops and kiosks (Figure 3.7). Replacement parts for mobile phones like keypads are clearly displayed in the shops, suggesting that customers repair and care for their investment. Building off of the earlier assertion that selecting a mobile phone and service plan was the first step towards crafting a cyborg identity, repairing, decorating, and caring for the mobile phone could be seen as a continued refinement of the identity. The repair and care that is available for mobile phones also begin to imply that mobile phones might be a part of the self that should be protected or can be adorned.



Figure 3.7 Mobile phone accessories kiosk on Broadway in Tashkent

Many kinds of mobile service are available. Phone calls are free for the first 5-7 seconds, and then they are charged by the minute. The interviews and mobile service providers' pricing sheets revealed that monthly costs for voice service can range from \$5 USD for limited, economical use to about \$90 USD for an unlimited calling plan. Voice mail is available as a service, but it is not commonly used or understood. A story from one of the business people contextualized the unpopularity of voice. He had set up an answering machine that he had brought back from the U.S. at home but eventually disconnected it because no one ever left a proper message. Callers either left confused recordings asking why no one was speaking, or they were caught swearing.

A surprising variety of additional services are available for the phone. Text messages are popular because they are cheaper than voice calls. A limited form of mobile Web was available in 2004 that allowed users to browse provider-based wireless content such as horoscopes and mobile phone account balances. Fully fledged WAP services for browsing the World Wide Web were also being launched in 2004.

Mobile phone bills, like most bills in Uzbekistan, are generally paid in cash every month at the cashier window of a branch office because checks and credit/debit cards that would allow for mail or electronic payments are not commonly available. Paying the bill at large branch offices usually requires waiting in long lines and is not a speedy activity. In-person payment of mobile phone bills is additionally inconvenient for people who do not live near a payment office such as those who live in the outskirts of Tashkent. In response to those customers, the mobile providers sell prepaid “scratch” cards at convenience stores and branch offices for users to add value to their phone as needed. Wire transfer payment of bills is also available through providers such as Coscom for business customers.

This overview of the mobile infrastructure in Tashkent reveals two major findings. First, mobile phone ownership requires not only an investment of money but also of time. Users must budget time to select a phone and service plan and to pay monthly bills. Extra time may be needed to learn the textual features on the phone if it does not fully support the user’s preferred language. The likely effect of this style of mobile infrastructure is that mobile phone users are fairly committed to the

technology, having invested time and money to acquire it. Second, the mobile infrastructure provides the first suggestion at how users construct hybrid, cyborg identities. They choose their handset at an informal market and combine it with a service plan to create unexpected combinations, for example, blending a Filipino Piltel phone with Uzdurobota service. And the availability of repair services and decorations starts to suggest ways that the mobile phone might be considered an extension of the body and identity that can be cared for and can express the personality of the user.

3.5.2 Mobile Phones in Public Space

Mobile phones figure prominently in public space in Tashkent thanks to billboards, posters, and banners. Advertising for fashionable handsets like Nokia (Figure 3.8), high-end services like mobile internet browsing (Figure 3.9), or mobile accessories and ringtones (Figure 3.10) are nearly ubiquitous in the city. They represent the extent of the penetration of mobile phones in the public consciousness. Even if the products advertised are not attainable by the average consumer, they symbolize aspirations of middle-class success, global trends, and self-expression. And with each facet of mobile phones that may be depicted such as power tool, fashion accessory, or cute toy, potential consumers are exposed to more reasons for mobile phone ownership. Advertisements can serve as influential, repeated messages that may shape and mold future mobile phone users.

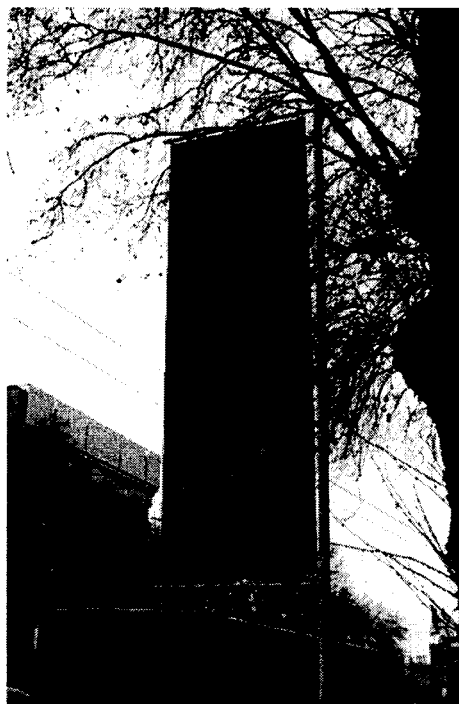


Figure 3.8 Banner advertising Nokia phones on Shota Rustaveli Street



Figure 3.9 Billboard for Uzdurobita mobile internet, "the first in Uzbekistan!"

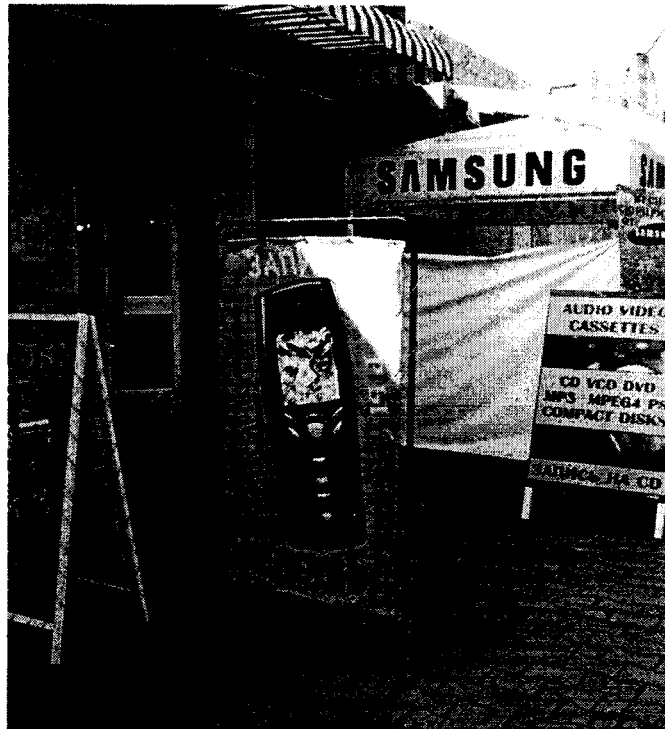


Figure 3.10 Advertisement for mobile ringtones on Navoi Street

The sight of someone actually using the mobile phone though was less common than the mobile advertising. During the public observations, mobile phones were occasionally seen in use, but their use was generally brief and fleeting, only about a minute or two for most observed calls. In contrast, many of the studies of mobile phone use reported in Chapter 2 draw from populations of heavy users (e.g., Kasesniemi & Rautiainen, 2002; Grinter & Eldridge, 2003; Ito & Okabe, 2004), and it could be extrapolated that regular, sustained episodes of public mobile phone use could be observed in those societies. Some explanations for the differences in Uzbekistan include the expense of making a phone call, as well as the culture's general "quietness" outside. Perhaps left over from Soviet times and concern about attracting undue attention, Uzbeks seem concerned with privacy and generally do not

talk loudly on buses, subway trains, or other kinds of highly enclosed public space. Restricted, conservative use of the mobile phone in public may be an extension of this behavior.

The relatively controlled use of mobile phones in public in Tashkent was not predicted by the boundary melting possibilities of hybridity or the blending of private and public spaces that was reported in the empirical literature. Hybridity suggests that mobile phone use naturally and organically grows out from private into public spaces: the constant presence and perpetual contact of the mobile phone encourages more use. However, in this situation, external factors of economics and culture dampen free use of the mobile in public, an example of how cyborgs are still in a space dominated by real world problems of access and power (Gabilondo, 1995). What this finding suggests is that the cultural environment must be conducive to mobile phone use in order for “truly” cyborg use patterns to emerge.

Gender seems to be related to public use of mobile phones. More men than women were observed using the mobile phone in outdoor space, while both men and women were observed using the mobile in indoor space. Figure 3.11 and Figure 3.12 show men engaged in outdoor mobile phone use. Men may be more conspicuous mobile phone users in public because they are more likely to have the financial resources to use their phones extensively. In this patriarchal society, men are more likely than women to have jobs that pay well and that require mobile phone use. Conversely, Uzbek women are less likely to have paid work or salaries that can support heavy mobile phone use. In addition, Uzbek women traditionally spend much

of their time in the home cleaning and cooking and thus are less likely to be in mobile situations than men.

The gender divide in Uzbek society implies the uniqueness of the females spotted in public using mobile phones. They are notable as women who have broken with the cultural tradition of staying at home, perhaps freed by the mobile phone from being tethered to the fixed-line telephone, similar to freedoms reported by women in studies by Gant and Kiesler (2001), Palen et al. (2001), and Lemish and Cohen (2005). These women are making first attempts at constructing new spaces and identities that allow them to be at home and outside or that bend the lines between rules of gender.



Figure 3.11 Young men on Broadway



Figure 3.12 Two men in Navoi Street

Although active use of mobile phones in public areas was relatively low, the conspicuous display of phones was common. At cafés and restaurants, users would set their mobile phone on the table, perhaps for ease of monitoring calls or to show off the device. At one popular upscale restaurant, Golden Wing, virtually every table had one or two mobile phones on it. Because of the expense of the mobile, the ability to own one signals economic well-being. Like using the mobile to attract mates (Lycett & Dunbar, 2000), men in particular may purposefully display the phone to indicate their social stature. But whether conscious or not, display of the mobile phone contributes to the construction of the identity of the owner. It makes the phone a visible appendage of the user, something that is part of who they are.

3.5.3 Reasons for Mobile Phone Ownership

While the observations in public space gave an overall perspective on the state of mobile phone use in Tashkent, the interviews allowed in-depth examination of specific issues such as ownership. Interview participants most often expressed three reasons for owning a phone: prestige, work, and parents. Prestige was cited by the older, early adopters. The two businessmen who were early users of the mobile phone described the excitement of being among the first to have a mobile phone in Uzbekistan. One participant vividly remembered his first mobile from 1993, calling it “like a brick.” The other participant said that he got his mobile at first just to show off. None of the other participants, who were at least ten years younger than these two businessmen, mentioned the excitement or prestige of owning a phone suggesting that mobile phones are no longer novel in the urban, middle-class landscape of Uzbekistan. The growing familiarity that mobile phones have for the population contributes to the likelihood they may be incorporated into daily routines in a natural, cyborg manner.

Work was another reason for mobile phone ownership that was reported. Two of the business people and one young person indicated this as a reason. (The young man owned his own business.) For these users, the mobiles were perceived as useful tools for work and not just an accessory. For example, one businessman noted that he needed the phone to do his work because he was often away from the office. The businessman who worked for the joint venture said that his mobile is useful for making overseas phone calls, because it is a reliable and cheap connection compared to the fixed-line telephone. He also sometimes made further savings in money and

time by sending text messages to overseas colleagues and thus avoiding the “water” or social chit-chat that frames voice conversations. Although using the phone for work resonates with the literature about economic benefits of mobile phones in the developing world, the motivations in Tashkent are slightly different. For these users, mobile phones make work more convenient and flexible—but work could still continue on landline phones. They choose to use the mobile to construct new ways of being that overcome limitations of the current business infrastructure.

Parents were the main reason for mobile phone use among the young people. Most of the young mobile owners reported receiving their phones as gifts from their parents. Those participants unanimously reported that their parents gave them the phones for the specific reason of “controlling” them or otherwise keeping tabs on their whereabouts. This type of parental leash has been reported in other studies of young people (e.g., Williams & Williams, 2005; Ribak, 2006), but in Uzbekistan, the mobile as proxy for freedom is particularly significant. Families and social networks are tightly knit, and in reality, parents could track down their children by placing a few phone calls to the “usual suspects.” But by giving a mobile phone, they implicitly acknowledge that children may stray from familiar (and approved) social connections as part of the fragmenting and individuation of society that supposedly accompanies modern living. The phone is an especially vital link for children who do not live with their parents. One student had left his parents’ home in Samarkand to study in Tashkent. The mobile phone was an important way for his parents to keep in touch with him because they did not know his social network in Tashkent and would not

have known who to call if he was not at home. As empirical literature about mobile phone use within families suggests, the perpetual contact afforded by the phone can create “symbolic proximity” (Wei & Lo, 2006) between children and their parents, suggesting that they are virtually together and monitored.

The reasons for owning a mobile phone in Tashkent provide some initial support in framing a theory of mobile hybridity. The motivations for the mobile phone can be re-interpreted to show how these mobile phone users are caught in global cultural flows and require a tool that merges conflicting desires in their life. The early motivation of prestige indicates the sweep of globalization, where mobiles are known as a trendy, fashionable device outside of whatever utility they may have. Use for work suggests that mobile phones are chosen to suture weaknesses in the infrastructure and that they support mobility, a representation of spatial fusions that allow work to be conducted in settings outside the office. The mobile link between parents and children points toward increasingly distributed relationships and hints at relaxing of the need to stay physically together because of the ability to be virtually together.

3.5.4 Value of Mobile Phone Use

As discussed earlier, mobile phone ownership entails a commitment of time and money. The results here consider the social meaning of the financial cost of the phone. Mobile handsets cost more than student budgets typically allow, so the young people were sensitive to the cost of their phones. They all mentioned taking care of the handset because they knew it was expensive, and more than one worried about

losing it. One girl did lose her mobile but was fortunate in that her father upgraded his phone soon after and gave her his old handset. Anxiety over the financial cost of losing the mobile phone instead of being cut off from friends suggests that mobile phones have not been so integrated into the lives of these young users in 2004 as to become like part of the body. Rather, external qualities of the mobile (e.g., cost) are more significant considerations.

Participants, in particular, young people, were conscious of the cost of mobile phone calls. Even one of the businessmen reported choosing to text message instead of making a voice call to overseas colleagues in some situations to save on cost. Regardless of the cost, all mobile owners mentioned that they lend their mobile phones to friends who need to make calls: the value of their personal relationships outweighed the material cost. Further cueing their willingness to spend money for the sake of friendships, young people often reported calling or text messaging friends, even though the phone was intended for family communication. While an important consideration, the cost of use does not preclude supporting personal relationships to some extent with mobile phones. In other words, relationships are more important than financial maintenance of the technological artifact.

Some young people reported saving on the cost of text messages by sending them through the computer at school where internet access is free. Mobile companies have text messaging features on their Web sites, and participants used them when they were at the computer and when they wanted to save on the cost of sending. One girl described sitting with her mobile phone in hand at the computer and responding

through the Web interface to any messages she received on the phone. This improvised sending of text messages shows a method of saving money and face without alienating friends by not returning text messages, a risk reported in the literature about teenagers in developed societies. This integrated use of mobile phones and the internet also shows a powerful example of the “multi-tasking” that can occur within a communications repertoire, emphasizing the value of contextual study of mobile phones.

3.5.5 Necessity of Mobile Phones

All of the mobile phone users reported needing their phones without an immediate explanation of why. Upon probing, participants would give more specific reasons for why they needed the mobile, such as for emergency situations, work, or mobility. It is a crucial point that the participants did not immediately elaborate on their perceived need for the mobile phone. It suggests that the mobile has permeated and become well-integrated into their daily lives, like the landline telephone, the television, running water, and electricity: a necessity of modern, urban life rather than an isolated artifact. Participants use the mobile for so many purposes that it is hard for them to articulate specific reasons for the necessity of the mobile phone. The invisibility of the mobile phone is a key step in paving the way to absorption of the device into communication habits and, metaphorically, the body.

The young people who did not own a mobile phone reported unexpected relationships with the mobile phone. Two of them did not own their own mobile, but they regularly used others' handsets. One of them borrowed his sister's mobile phone

to play games. The other sometimes borrowed his father's mobile phone when he went out with friends for emergency use and to be in touch with home. Non-owners who use the mobile complicate the definition of mobile phone user. These examples of use lend support for a hybrid interpretation of the world that acknowledges identities that may blend two polar positions.

Mobile phone users did not refer to the devices as annoyances or burdens, nor did they problematize being reachable at all times. The Tashkent mobile users only had positive things to say about mobile phones, and any criticisms were against the quality of the phone or service. The participants in this study had not experienced the negative aspects of blurring boundaries of work and home or the challenges of being in constant connection with others. Mobile phone diffusion is still in its early stages, and Uzbekistan has a slow pace of life where hyper-coordination of personal lives is uncommon. For these reasons, mobile phone use is "low key" and has not yet reached the levels of heavy use and wide diffusion that may be necessary for mobile phones to start feeling intrusive.

However, some measure of anxiety accompanies the increasing presence of mobile phones in Tashkent. One non-user felt mobile phones eroded face-to-face relationships, an opinion that echoed early criticisms of CMC potentially decreasing social capital. This viewpoint hints at the uncertainty that often attends social changes. Despite this atmosphere, the mobile phone users in this study have developed communication habits that perpetuate ties between children and parents and continue

to place high value on friendships. In other words, participants use the mobile in a constructive, positive manner to support their personal relationships.

3.6 Discussion

This study makes a first step in articulating a theory of mobile hybridity by identifying patterns of mobile phone use that support the validity of the hybrid and cyborg theoretical frames. Specifically, these theoretical frames were tested on use of mobile phones to construct identity and to support personal relationships.

Simultaneously, this study situated urban, middle-class mobile phone use within a larger cultural, political, and economic context.

Tashkent is experiencing many cultural changes stemming from independence and the forces of globalization. The hybridity of Tashkent residents is heavily rooted in the historical particularities of the region. Governmental language reforms, the ostensible democratization of society in a repressive atmosphere, and increased spending opportunities concurrent with high unemployment has created numerous liminal spaces that the middle-class must negotiate. There are already strong examples of the Uzbeks resisting and integrating these multiple cultural influences, for example, speaking several languages throughout their daily routine, or being a mobile phone user without owning a handset.

Given this shifting and evolving cultural landscape, mobile phones may yet play an important role in navigating these third spaces. Mobile diffusion and use is still nascent in Tashkent, so cyborg use of the technology was not observed during

this study. And some of the findings were not predicted by hybridity, e.g., the relatively little public mobile chatter in public space. But this break in the theory underscores the important reminder that cyborgs are not a techno-utopian site: they cannot conquer every barrier of the physical world. In the Tashkent example, the political consequences of attracting undue attention may inhibit complete merger of the private and public spheres. But the general findings of the study hint at future patterns of intimate use of mobiles.

Mobile phones are poised to be technologies that can be integrated into users' communications repertoires in Tashkent. Mobile phones are like invisible necessities from the perspective of their users, suggesting they are already woven into the technological landscape for the urban middle-class. The care that users take with their mobile phones as well as the ability to repair and decorate them suggest that mobiles are already an intimate companion for users. And conspicuous display of mobile phones subconsciously indicates that the phone is a visible part of the owner.

Users are already engaged in elements of cyborg construction with technology. By choosing a mobile phone that may not have been designed for Uzbekistan, they are making unexpected juxtapositions of technology and culture—habits that lend themselves to purposeful suturing of cultural gaps with technology. And as predicted by Sandoval (1995), these post-colonial descendents of the subaltern are experts at coping with differences and gaps. The girl cobbling together an inexpensive communication system with mobile and computer-based text messaging is an excellent example of that skill.

Mobile phone users appear to be engaging in the early stages of identity construction with technology in Tashkent. For example, women in public space using mobile phones are constructing an identity that bends “the rules” about females outside the home. The users who were motivated by work to use mobile phones are overcoming limitations of the existing communication infrastructure to suit their need to be mobile or to make reliable and cheap overseas phone calls. In this way, mobile users are prepared to actively build new identities that overcome existing structures.

The most compelling evidence for future intimate use of mobile phones is the mobile tethering that already occurs between children and their parents. Although not a perpetual contact, it evokes a desire to approximate closeness and protect children even when separated. Mobile phones can further strengthen social networks, such as when users lend their phones to friends regardless of expense. With further diffusion of mobile phones, it seems that more cyborg-type behaviors may be observed.

The Tashkent study lends support to use of the hybridity and cyborg theoretical frames. In turn, they suggest that mobiles can have an innovative role in supporting personal relationships. With mobile phones clearly changing the nature of the parent-child relationship and supporting friendships, they can also support and change other kinds of intimate relationships. The main study was conducted in Bangalore, India, with these types of possibilities in mind. The next chapter fleshes out empirical support for a theory of mobile hybridity.

Chapter 4: Mobiles for Supporting Romantic Relationships in Bangalore

This chapter formulates the theory of mobile hybridity by presenting and analyzing a study of mobile phone use in Bangalore, India. The purpose of this study is to consider how young, urban, middle-class people use mobile phones to support their romantic relationships as well as other intimate personal relationships with friends and family and analyze the findings through the hybridity and cyborg lens.

The main themes from Chapter 2 that inform this study relate to supporting intimate personal relationships, especially romantic ones, with CMC and mobile phones. Concepts about CMC and mobile phones as tools of hybridity are also key. The literature suggested that mediated communication for romantic purposes has links to real space behaviors. And at the same time, the technology affords new behaviors: users construct an identity within a virtual space and also emotionally engage with the technology. Communication technologies, particularly mobile phones, blur spatial boundaries and the lines delimiting personal space, and create new liminal spaces. Grounded in the literature, this chapter describes how young urbanites use mobile phones to support their intimate personal and romantic relationships in Bangalore. These findings will be situated within a broader web of ICT use.

Bangalore is rapidly evolving into a cosmopolitan location of multiple languages, cultures, spaces, and transitions (see Figure 4.1 for a map of India). It is the capital of the state of Karnataka in southern India and a major metropolis (after

Mumbai, Delhi, Calcutta, and Chennai). The city is currently famous as the Silicon Valley of India because of the large number of international and Indian IT businesses that have set up shop there to take advantage of India's technical talent pool. The presence of multinational corporations, international consumer goods, and global media has naturally affected the landscape of Bangalore.

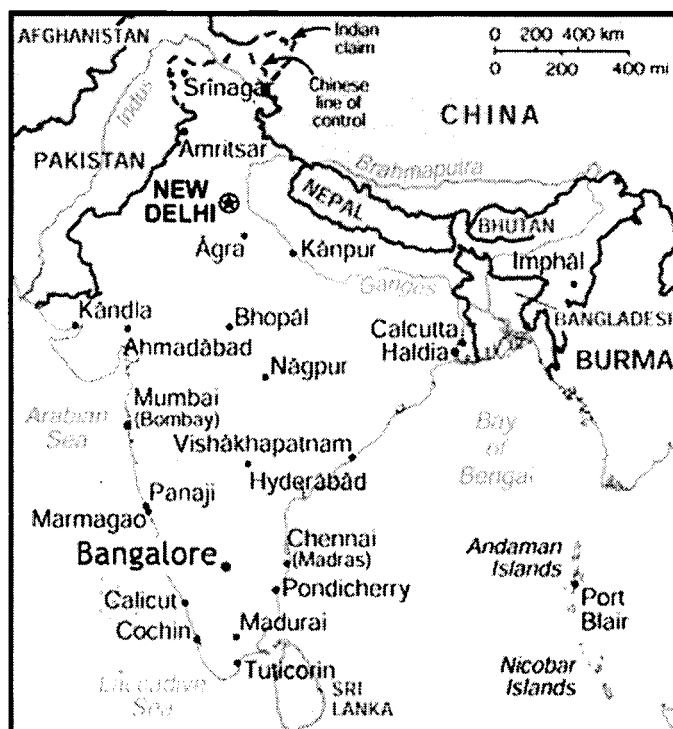


Figure 4.1 Map of India (Courtesy of the University of Texas Libraries, the University of Texas at Austin)

Bangalore is dotted with colorful billboards advertising shampoos and mobile services, stores selling branded clothes like Reebok and United Colors of Benetton, and streets clogged with cars, motorbikes, auto-rickshaws, and bicycles. The city is densely populated with an estimated 6 million people (Bangalore, 2006). The people in Bangalore are often migrants from other parts of India, hoping to take part in the

gold rush of prospects and prosperity. The cultural influx is continually woven into the fabric of the city: several languages are spoken by the population, and trendy Western wear is as common as traditional Indian clothing. Sometimes these multiple cultural influences hybridize, like gobi manchurian, a spicy cauliflower dish that is neither classic Indian nor Chinese cuisine but “Indo-Chinese.”

Yet the diversity and cultural fusions of the city are often hidden by constructed narratives. For example, Kannada is the “official language” of the state of Karnataka and consequently Bangalore, yet it is not the dominant language on the streets. Tamil and Telugu are also commonly spoken in Bangalore as native languages of South India; and English and Hindi are widely used as *lingua francas* as more migrants come to the city with their own linguistic traditions. Underneath the homogenous mask of a state language lies a complex hybrid landscape of language.

Bangalore has the trappings of a sophisticated, affluent city. Yet it is embedded in the context of a developing country. Interspersed with the wealth and modernity are indigent people who live in tents made of blue tarp, an inconsistent electrical supply, roaming cows and stray dogs, and farmers hauling their goods in horse-drawn carts. It is these contrasts and fusions in a single city that lead to seemingly incongruous objects being juxtaposed with one another such as a cow standing in front of the Modern World appliance and electronics store in the Domlur neighborhood, just minutes away from the IT business park where most of the study participants worked (Figure 4.2).

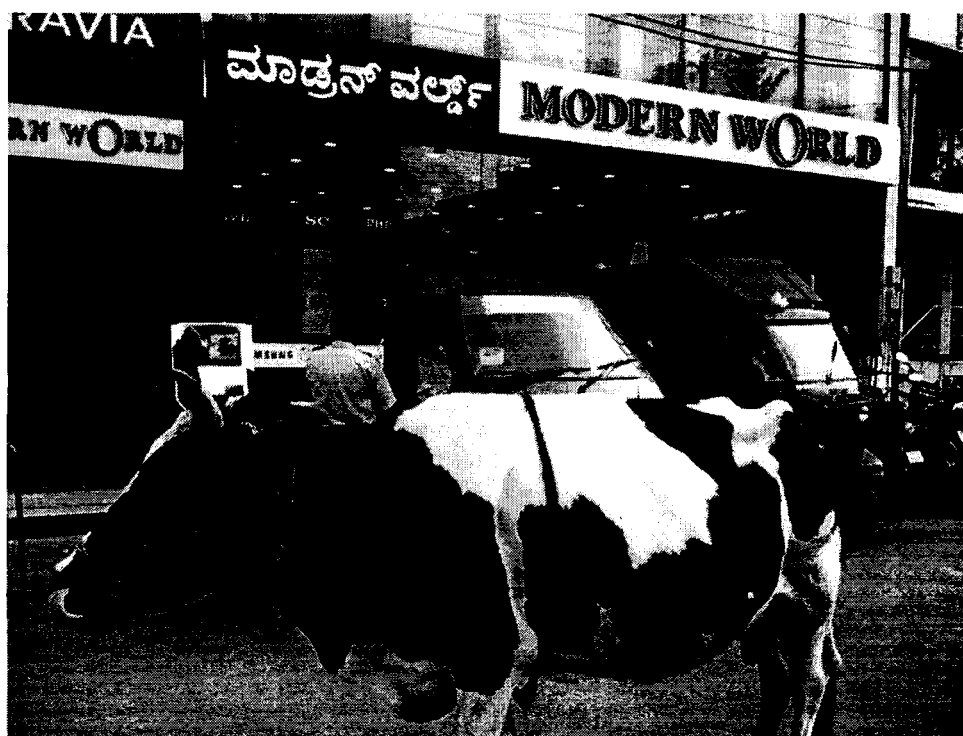


Figure 4.2 Cow in front of an electronics store in Domlur

In this culturally diverse space, mobile phones are ubiquitous tools. In 2005, across all India, 90 million mobile phone lines were in use, making up about 64 percent of all telephone lines (International Telecommunication Union, 2007). But this image of high-tech penetration should be contextualized: in a country the size of India, only 8.16 mobile lines were available per 100 people (International Telecommunication Union, 2007), underscoring the technological privilege of Bangalore.

On the streets of Bangalore, many people can be seen carrying mobile phones, wearing headsets in their ears, texting a message, or talking on the phone. The widespread use suggests that at least for some people, the phone has become a

“mobile essential” (Chipchase, Persson, Aarras, Piippo, & Yamamoto, 2005), as natural and vital a thing to carry as cash or keys. Their pervasive presence and the comfort and facility that users exhibit with their phones suggest the mobile is like a body part, a natural extension of the self for these users (see Oksman & Rautiainen, 2003). Such a setting is ripe for a study of technology as it is used to support romantic relationships because of the wide availability of mobile phones and their visible integration into personal lives.

4.1 Problem Area

The purpose of this study was to understand how young people in Bangalore use ICT, especially mobile phones, to support their romantic relationships in a culturally blended space. The study examines how mobile phones are used as part of a communications repertoire for supporting the various stages of a romantic relationship such as finding a partner, courtship, engagement, and marriage.

The study focuses on young, urban, middle-class people in Bangalore, a population that is likely to use mobile phones. They are people who may be influenced by global media, have jobs with international companies, and have studied overseas. They may also be willing to push the boundaries of social norms, for instance, finding prospective marriage partners in ways that break with cultural traditions and using technology in the rituals of romance.

The confluence of global cultural flows has carried multiple languages, ethnicities, and cultures to Bangalore, creating many “third spaces.” Residents of

Bangalore must learn to negotiate these liminal spaces that are neither Western nor Indian, neither modern nor traditional. The young people themselves are often recent immigrants to the city and bring their own cultural traditions and baggage to the mix. In addition, many people work for multinational companies and engage with partners and customers worldwide. The call centers especially, are a powerful example of the “new politics of race, hybridity, and diaspora” supported by the globalism of ICT, as described by Shome (2006). Corporate policies that encourage “cultural neutralization” and playing American characters over the phone with customers contribute to the striking confusions of time and space, as well as “home” and “away,” particularly among overnight shift workers. In this environment, mobile phones are a critical tool for these young urban people to support the intimate relationships in their lives and simultaneously negotiate shifts and suture tears in their cultural landscape.

4.2 Research Questions

The second research question from Chapter 1 addressed the issues of the Bangalore study:

- RQ2. How do young, urban, middle-class people in Bangalore use mobile phones to support their romantic relationships?
- a. What emergent behaviors are associated with mobile phones?
 - b. What are the rituals and customs of mobile phone use for romantic relationships?

- c. How are mobile phones being used within a communications repertoire of other ICT to support romantic relationships?
- d. What mobile phone use behaviors suggest “hybrid” use of mobiles?

By answering this research question, this study creates a space for theorizing about the cultural work of supporting intimate and romantic relationships with mobile phones. It offers insight on how technology can be so integrated into personal lives that it affects how users perceive and interact with others. The findings of this study frame a theory of mobile hybridity.

4.3 Literature Review

This literature review focuses on formation of and cultural attitudes toward romantic relationships in India. A complex tapestry of customs, beliefs, and rituals is associated with marriage and romantic relationships. Complicating their description is the sheer diversity of beliefs and customs surrounding marriage, with variations to be found even in the most fundamental matters. For example, attitudes towards consanguinity (marriage between relatives) can range from an historical preference for marriages between uncles and nieces among South Indians (Driver & Driver, 1988; Bittles, Coble, & Rao, 1993; Audinarayana & Krishnamoorthy, 2000) to a prohibition against marrying anyone sharing a relative within seven generations on the paternal side among Bengalis (Bhattacharya, 1999). The purpose of this literature review is to highlight core issues related to romantic relationships that are evolving and that might be affected by mobiles and ICT.

Few rigorous, large-scale studies have been made of premarital relationships (romantic or sexual) in India in part because of cultural taboos (a lack in the literature discussed by Sachdev, 1998, and Alexander, Garda, Karade, Jejeebhoy, and Ganatra, 2006). Families seldom discuss opposite gender relationships or sex because of fear that it suggests acceptance of premarital relationships; the unsurprising result is that premarital relationships are often clandestine (Alexander et al., 2006). Engaging in a premarital relationship can entail high stakes for a young person, for “those who pursue pre-marital relationships not only run the risk of bringing dishonour to the family but also reduce their chances of a good marriage. The hint of a pre-marital relationship can, moreover, hasten marriage for young women to a man not of their choice” (Alexander et al., 2006).

However, dating is not an uncommon phenomenon. A survey study of university students in Delhi conducted by Sachdev (1998) found that about half of the males and about one-third of the females reported experience with a steady dating partner; and about one-third of males and one-quarter of females reported experience with two or more dating partners. A rich language to talk about romance and dating has also evolved among young people in Pune as reported by Alexander et al. (2006), where “to propose” is to make an offer of romantic partnership, and “loveship” describes a “romantic partnership” or dating relationship.

But still, marriage is the cornerstone of romantic relationships in India and is an essential stage of life in the Hindu religion, which is practiced by 80 percent of Indians (Mullatti, 1995). Marriage is an activity traditionally motivated by collectivist

values of family, procreation, and community stability rather than individualistic wishes. Love is not considered necessary for a marriage, and it is also not considered an important attribute in partner selection; more important qualities are physical attractiveness, financial security, contributions to household chores, and parenting skills (Medora, 2003). The conceptualization of marriage is more pragmatic than it is romantic. Marriage is considered a union of two families, and thus multiple people and factors are contemplated before a marriage (Medora, 2003).

One explanation for a collectivist rather than individualistic view of marriage is that Indian society has traditionally been hierarchical with a caste-based social system that acknowledged inequality between social groups, occupations, and genders (Mullatti, 1995). In this society, “joint families” are customary, with large extended families cooperatively living together and perhaps working collectively in the context of a family farm or business. The family might be considered a reflection of Indian society in miniature because it, too, is hierarchical with respect to age and gender. Most communities in India have patriarchal family structures where the male members of the family make decisions for the entire family, although some communities in the south are matriarchal (Mullatti, 1995).

With this strong family-oriented environment and hierarchical structure, it is not surprising that marriage is typically viewed as a family decision because it is a union of two families with all the attendant notions of social status, alliance, and family property (Uberoi, 1994; Mullatti, 1995; Medora, 2003). Good family backgrounds and compatible horoscopes are traditionally considered crucial

requirements for a successful match. Furthermore, families would be concerned about how well a prospective daughter-in-law might fit in because the woman would often live with her husband's family and become a contributing member of the household. In South India, with the fairly common practice of consanguinity, marriages were literally a family affair that further bonded relations and ensured that property remained under family ownership. Even as recently as 1993, over a third of marriages in South India were between blood relatives (Audinarayana & Krishnamoorthy, 2000).

The customs and beliefs surrounding marriage are naturally evolving. Consanguinity, for example, is declining because of the influence of Western values, publicity about genetic diseases, increased education, and increased urbanization and intermingling with other cultures (Bittles et al., 1993; Audinarayana & Krishnamoorthy, 2000). Likewise, age at time of marriage has been rising. In the early part of the 20th century, it was common in parts of India for pre-pubescent children, especially girls, to be married because of short life expectancy and the Hindu value placed on marriage (Mullatti, 1995; Banerjee, 1998). But since then, age at marriage has been steadily rising (Caldwell, Reddy, & Caldwell, 1983; Ullrich, 1987; Singh, 1998; Banerjee, 1998; Sheela & Audinarayana, 2003). Some explanations for the rise in age include more educational opportunities for both men and women (thus delaying ideal age for marriage) and cultural trends toward post-pubescent marriage.

Many social impacts are associated with the rising age at marriage. For example, women may have more input in their marriage choices, jobs, how their

house is run, or how their children are raised (Ullrich, 1987). In the past, men had been pre-eminent in such decisions, but with women marrying at an older age, they may feel more confident and self-aware with their increased education and life experience. And with both men and women marrying later in life, they may have more independent spirit and wish to exert more control over decisions related to marriage (Singh, 1998). A study of young people in Nepal, a culturally similar South Asian country, found that today's young people are experiencing more personal input in their choice of spouse in part because of influence from the media, membership in youth clubs, and working and living away from family (Ghimire, Axinn, Yabiku, & Thornton, 2006).

Another critical change in the conceptualization of marriage in India concerns its utility for social mobility. Although marriage is still conceived of as a union of two families, hypergamy (marriage of a woman to a man of higher social status or caste) has become desirable because such a match would improve the social status of the bride's family (Uberoi, 1994; Mohanadoss, 1995). In modern, urban settings, this hypergamy might be extended towards a desire for a socially advantageous match that would ensure the economic welfare of the child. For example, it is materially better for a woman to marry a man with a good career and steady income than a man with no prospects. In an in-depth qualitative study, a South Indian woman said that she did not even consider her brother as a potential match for her daughter because he was too poor; her daughter with a college degree eventually married a rich man (Kapadia, 1993).

This concern about the material and social benefits of a marriage has ironically served to hurt the status of women despite social reforms (Banerjee, 1999). The kinds of educational and career opportunities that men have enjoyed are less readily available to women, leading to a commoditization of men on the marriage market, where men with better education and careers can expect to command a higher dowry or a more desirable match (Kapadia, 1993). The bride's family is often expected to offer a dowry to the groom's side, which may be a gift of cash, goods, or property that ensures a smooth start in life for the couple (Srinivasan & Lee, 2004). The dowry is usually part of a pre-wedding negotiation but sometimes demands for more gifts continue after the marriage, negatively impacting brides and their families.

Some of the transitions in marriage may be the result of migration, where being situated in a non-native community affects how marriages are arranged and carried out. A study of Bengalis in Delhi (about 900 miles northwest of Calcutta, the capital of West Bengal) found that core values such as avoiding consanguinity were maintained, while other customs evolved to suit the circumstances of being away from home such as being flexible about arranging a prospective marriage (Bhattacharya, 1999). Traditionally, young Bengalis grew up surrounded by relatives who knew when they were ready for marriage and could suggest matches without explicit prompting from the parents. But Bengalis away from their native place are not proximate to their extended family, so parents often have to initiate a search by consulting relatives at home, local friends and colleagues (non-kin), or matrimonial ads. This change in the marriage search implies that prospective spouses may not be

already familiar or connected to the family. In other words, some of the characteristics of globalization such as mobility and migration have profound effects on how romantic relationships are initiated and supported.

In general, marriage in India today seems to be an increasingly individualistic affair that takes into account the prospective bride or groom's perspective. In an interview study of recently married people in Bangalore, young people were found to have more individualistic impulses towards marriage than their parents' family-oriented views (Singh, 1998). Young people desired partners with personal traits that contribute to upward mobility and aspirations, such as good education or a job. Singh also found that the mate selection procedure often incorporated the perspectives of the young people, e.g., half of the recently married people had met their spouse before marriage, and they gave consent for the match.

Given these changes in attitudes and rituals of romance, the general pattern of mate selection today has been well-described by Medora (2003): Marriage is typically arranged. Children are willing to let their parents select a partner for them because they are older and wiser, but they also want a final say in their marriage. Partners may be found through social networks or through matrimonial ads in newspapers or the internet. After a list of candidates is narrowed down by the parents, the young people have an opportunity to meet or talk on the phone to test compatibility, and parents are informed of the child's decision. There is also a semi-arranged marriage, where parents screen potential partners for the children and allow them a courtship period to date and determine compatibility.

This literature review suggests that marriage traditions and attitudes toward romantic relationships are changing for many complex reasons outside of mobile phones and technology. But fluid and evolving rituals surrounding romantic relationships and marriage create a space and opportunity for people to fold mobiles and ICT into their support of these intimate relationships. The changes in the romantic relationships also symbolize other cultural changes that are occurring, so a study of mediated communication and romance can be a test of larger principles related to cultural and technological hybridity.

4.4 Methods

This research project was conducted in summer 2006 with a multimethod qualitative approach. The standards of qualitative research held by this study were credibility, transferability, dependability, and confirmability, which are analogous to the experimental criteria of internal validity, external validity, reliability, and objectivity (Lincoln & Guba, 1985).

The credibility of the study was established with prolonged engagement and multiple meetings with each participant that helped to uncover their personal biases. The credibility was also strengthened with the study's multimethod approach. Triangulating information from multiple methods allows confirmation or invalidation of findings from individual research activities (Brewer & Hunter, 1989). Multiple methods in sociological projects create a concrete frame that acknowledges the socially constructed nature of scientific research (Hunter & Brewer, 2003). They are ideal for cross-cultural and international research contexts because of the "practical

problems” that arise when the researcher is unfamiliar with the local context (Pearce & Narula, 1990), and because in a setting like India, social desirability can influence an answer (Narula, 1990). Multiple methods also attempt to close the gap between “cultural ideals” and “cultural practices” (Bell, 2004). A problem space like romantic relationships is especially prone to people talking about the ideals or “shoulds” of the culture. To capture actual practices and enhance the credibility of the study, participants were asked to share behaviors within specific time frames through a mobile diary and participant observation, supplementing a semi-structured interview and paper-and-pencil questionnaire.

The transferability of the study was supported by linking findings with previous literature and offering a “thick description” of the data so that future researchers have a context for the interpretation of the data. Dependability and confirmability were supported by documenting the source data for each interpretation so that the empirical rationale for the analysis was clear. This qualitative study generated new theory with this rigorous qualitative design.

4.4.1 Participants

Young, urban, middle-class people in Bangalore were recruited for this study. These people were targeted because they are likely to use mobile technologies and to be exposed to multiple cultural forces in this cosmopolitan city. Participants were primarily recruited with an email announcement to workers at Microsoft’s Global Technical Support Center (GTSC) in Bangalore, a convenient pool because this study was supported by Microsoft Research India. GTSC’s workers provide advanced tech

support for Microsoft customers worldwide in a 24/7 environment with unconventional shift timings. They are representative of the IT sector in Bangalore and the significant offshoring and business process outsourcing (BPO) industry where international companies send business to India because of the savings in labor costs and the ability to provide round-the-clock service.

Interested participants were invited to contact the researcher. There was also a secondary snowball sample of the participants' social networks. Drawing participants through social connections and snowball sampling is an effective way to find participants. As noted in Chapter 3, such sampling methods have been used by other researchers (see Blom et al., 2003, for an example). Participants were expected to allow the researcher to enter very personal, private parts of their world for a significant period of time, so making them as comfortable as possible was essential. Because there is already some common element and connection between the researcher and the participants, it is easier for them to develop trust and rapport.

Twenty participants were recruited for this study. Sixteen worked at GTSC in technical support or technical lead/management positions, and the other four were drawn from participants' social networks. Of the non-GTSC workers, two worked in a call center selling credit card services, another worked in technical support for another multi-national company, and the last was a pharmacist at a hospital. All participants worked in 24/7 environments with unconventional hours such as graveyard shifts.

Sixteen of the participants were men, and four were women. The gender imbalance in the study was representative of the predominantly male population of GTSC (three of the women in this study worked at GTSC). The median age of participants was 25. Four participants were married, two engaged, five in a steady committed relationship, one in an on-again, off-again relationship, and eight were single. With the exception of two pairs, the participants represented just “one side” of the relationship, e.g., their partners were not involved in the study. None of the participants was divorced or widowed. All of the participants were in heterosexual relationships. Participants were from all over India, and they were linguistically diverse. All spoke English professionally, so no interpreters or translators were used for this project. Table 4.1 describes the demographics of the participants.

Table 4.1 Summary of participant demographics in Bangalore

ID	Gender	Age	Type of romantic relationship	Living with whom	# years in Bangalore
1	M	28	single	roommates, parents will be visiting	8
2	M	25	committed relationship	parents are visiting indefinitely	1.75
3	M	27	engaged	roommate	2
4	M	26	married	roommate	1
5	M	25	single	roommates	1
6	M	23	single	roommates	2
7	F	24	committed	alone	1
8	M	30	single	parents, sister	25
9	F	26	married	spouse, mother-in-law	native
10	M	27	single	alone	1
11	M	26	single	roommate, brother	2
12	M	25	single	roommates, brother	4
13	M	26	engaged	alone, parents had recently visited	1.4
14	F	23	single	alone	1
15	M	21	on-again, off-again relationship	alone, mother had recently visited	1
16	M	23	committed relationship	roommates	0.33
17	M	24	committed relationship	roommates	1
18	M	24	committed relationship	roommates	2
19	M	25	married	spouse	0.83
20	F	24	married	spouse	0.5

4.4.2 Materials

Forms and scripts were prepared for volunteer recruitment and data collection activities. To recruit and inform volunteers, a study recruitment text, recruitment screening questionnaire, and consent forms were created. The study recruitment text (Appendix A) described general expectations of the study and the basic eligibility criteria. It was emailed to the GTSC announcement list and to interested parties. The

recruitment screening questionnaire (Appendix B) asked participants for their contact information, age, gender, marital status, and technology use. Two consent forms were prepared. The first consent form (Appendix C) explained the scope of the overall study and expectations of participants, as well as their rights to confidentiality and to decline to participate in any aspect of the study. The second consent form (Appendix D) related to photo publication, and it asked participants to review and approve photos that were taken of them in the study, explaining that the researcher had permission to keep and publish their photos.

For data collection, three instruments were designed: questionnaire, personal interview script, and mobile diary form. The paper-and-pencil questionnaire (Appendix E) was eight pages long and intended to capture demographic information; social attitudes; attitudes toward technology; general patterns of computer, internet, and mobile phone use; and specific information about mobile phones such as description of payment plan. The questionnaire was designed with consideration of the challenges of survey design for a cross-cultural setting (Harkness, Van de Vijver, & Johnson, 2003), including the implications of social desirability biases (Johnson & Van de Vijver, 2003) and potential unfamiliarity of participants with the survey genre (Chu, 1990). This questionnaire was informed by previous surveys about technology use administered in Central Asia (Kolko et al., 2003; Wei & Kolko, 2005a; Wei, Spyridakis, & Kolko, 2006), as well as by survey-based mobile phone studies such as Chakraborty (2006) and Rainie and Keeter (2006). Most questions were close-ended,

multiple-choice, or Likert scale. Some questions were open-ended and required writing short responses.

The personal interview script (Appendix F) addressed similar issues as in the questionnaire but in a more in-depth manner. Questions focused on daily routines, family relationships, preferred social activities, mobile phone use, and romantic issues like personal attitudes toward marriage and mobile phone use to support courtship. The script was customized for different kinds of romantic relationships; for example, married people were asked about how their marriage had been arranged, while single people were asked about their strategies for meeting potential partners. The interview format was semi-structured and allowed for exploring emergent avenues of inquiry, a recommended approach in qualitative projects (Spradley, 1979; Briggs, 1986).

The mobile diary form (Appendix G) sought to capture actual calling and texting habits of participants. The diary form was informed by the log used by Grinter and Eldridge (2001; 2003) in their studies of English teenagers and their SMS patterns. The diary provided space for participants to record information about their dialed calls, received calls, missed calls, incoming SMS, and outgoing SMS. Examples of details they were asked to record include date and time of call/SMS, the caller's/texter's name, general topic of conversation, physical location during the call/SMS, and whether the call/SMS was linked to other communication. In addition, participants were asked to record information about the intentionality of missed calls (such as a pre-arranged signal to come downstairs).

The screening questionnaire, questionnaire, personal interview script, and mobile diary were all vetted by Indian cultural informants and then revised based on their feedback and suggestions. The cultural informants were either eligible to participate in the study themselves or were familiar with the study population.

4.4.3 Procedures

People who were interested in volunteering in the study were asked to complete the recruitment screening questionnaire to determine whether they met the requirement of being aged 18-30 and having regular access to a mobile phone. The screening questionnaire also identified characteristics that diversified the sample such as gender and marital status. People who qualified for the study were invited to meet with the researcher. All meetings were privately arranged to protect the confidentiality of the participants. Participants were encouraged to arrange meetings at locations and times comfortable for them. Typical meeting places were GTSC, Microsoft Research India, coffee shops, or participant homes. The researcher attended all meetings alone to maintain privacy and to make participants feel more comfortable, even in participants' homes. Although potentially risky for a lone interviewer to visit a participant's home, the Microsoft connection between the researcher and participants made the relationship feel safe because of a sense of accountability and social obligation. Meetings would be throughout the week and typically in the afternoon and early evening, but sometimes they would be arranged for late night or early morning to suit the participants who worked the graveyard shift.

During the first meeting, the study was explained to participants, and they were encouraged to ask questions or express concerns. They were then asked to sign the consent form. During this meeting, most participants also completed the paper-and-pencil questionnaire and in some cases they also completed the personal interview. However, these activities were also broken into separate meetings depending on the participants' schedules and preferences.

Participants completed the paper-and-pencil questionnaire on their own, with the researcher sitting unobtrusively to the side. Participants were allowed to ask clarification questions as desired, but they were not coached in their answers and were encouraged to answer all questions to the best of their ability. Questionnaires were reviewed on the spot, and participants were asked whether blank answers were intentional. They were given the opportunity to fill in omissions if desired. Most participants completed the questionnaire in 20 minutes.

The personal interviews were conducted one-on-one and digitally audio recorded. Participants were free to skip questions or to take breaks or to interrupt at any time. It was also possible to stop audio recording if participants felt uncomfortable. As participants answered the questions, the researcher would also jot down notes in a notebook. If intriguing themes emerged during the interview, the researcher would deviate from the script to ask follow-up questions. The interview took 45 minutes to two hours to complete over one to three meetings depending on the loquacity of the participant.

Participants were asked to keep a mobile diary using the log form for four days: over a two-day “weekend” and the two days bracketing that weekend. In some cases, the weekend was not the traditional Saturday and Sunday because of shift timings. The purpose of considering weekends and weekdays was to ascertain how mobile phone use might vary depending on work demands. For their first time keeping the diary, participants were asked to copy as many as 20 calls and SMS from their existing call history and SMS inbox/outbox. They were then asked to fill out the diary twice a day copying down new entries only. They were to describe details such as the topic of the call based on their recollection. This approach of asking participants to periodically complete the diary rather than as each call or SMS occurred was considered a less burdensome and intrusive task. After the diary period, participants met with the researcher to explain the information in their diary. The diary was intended to prompt participants to share stories about actual incidents of use. See Appendix H for a sample mobile diary from a participant.

Some participants could not or would not keep the diary. For them, the activity was modified so that the researcher and participant would look together through the existing calls and SMS on the participant’s mobile phone and copy them into the log, a modification of Donner’s (2005a) technique of asking participants to speak about the last ten calls recorded in their phone’s built-in call history. Although doing a one-off meeting to look at the call history was a good compromise to keeping the diary, some of the weaknesses of this method are that phones often do not have sufficient memory to track all the calls that may have been made in a four day period.

Some mobile phones also had peculiarities that made it difficult to look at a sequence of calls and SMS such as call histories grouped by caller rather than by time received, call histories that kept only one call per caller, or absence of a stored SMS outbox. The participants had very good powers of recall, but some of the calls were too old or trivial for them to remember clearly. However, since the purpose of the diary was to elicit stories about specific mobile phone use, using the phone's existing call history was sufficient for prompting conversation, albeit about recent calls and text messages rather than those from a slightly longer period of time.

The last data collection activity was participant observation sessions where participants could show the researcher at least one part of their life, e.g., their work environment, their home, or a favorite "third place" like the coffee shop or mall. During these sessions, participants were asked questions about different features of their place, for example, how they used mobile phones there, what they enjoyed doing there, and how they used the technology in that space. In addition, these observation sessions were opportunities to gather more stories or information from the participant to supplement what was formally collected during the questionnaire and interview activities. On visits to homes, participants were often eager to show photo albums of family, friends, and memorable vacations so more was learned about their past in this way. During observation sessions, spaces were documented with photographs (with permission), avoiding any identifying features or objects. Photos with identifying features were blurred in Adobe Photoshop. After their participation, participants were asked to review and approve the photos that had been taken of their spaces. They

could indicate the photos they wanted deleted, did not want displayed in public, or that were acceptable for scholarly publications and presentations.

At the end of the study, regardless of the extent of their participation, all participants were given gift certificates worth Rs.200 INR (approx. \$5 USD) redeemable at Café Coffee Day, a national chain of coffee shops. Participation in the overall study lasted from a week to several weeks depending on when the participant could be scheduled to complete each data collection activity. Some participants did not complete every data collection activity because of scheduling conflicts or personal situations, such as one participant who moved to a different state during the study.

Finally, separate from interactions with participants, the researcher wrote field notes and took digital photos regularly to document physical characteristics of Bangalore. The notes and photos were intended to supplement and contextualize what was learned through the participants. Field notes are a time-honored tool of the ethnographic researcher, a necessary component of creating “thick description” of a research site and its occupants (Emerson, Fretz, & Shaw, 1995). Photos were taken on excursions to types of places that were known to be frequented by the participants such as shopping malls, popular streets, cinemas, coffee shops, etc. The photos served as evidence but also as a kind of field note for reminding the researcher of what was interesting or notable at a certain point of time.

4.4.4 Data Analysis

To prepare for analysis, the raw data from the formal data collection activities of questionnaires, personal interviews, and mobile diaries were placed in matrices. For the questionnaires and interview data, matrices were created where columns represented questions and rows represented a participant's answers. Actual quotes or paraphrased statements were used in these matrices. In cases where a line of questioning was used with only one participant, e.g., following up on an intriguing comment, the yielded information was placed in the matrix under the question that had sparked the line of questioning or under another question that more closely aligned with the topic.

For the mobile diaries, a matrix was also created but with a condensed version of the data. The diaries contained very specific entries about phone calls and text messages. That data were summarized to better capture broad patterns of use. Furthermore, the patterns of the calls and SMS in the matrix allowed for meaningful comparison across participants. Specific calls or SMS were included in the matrix if they had triggered significant stories, indicated a trend, or related to something discussed at other times with the participants.

The artifacts of participant observation were analyzed without matrices. The participant observation field notes were left in a linear format. Photos were uploaded with restricted access permissions to Flickr¹, an online photo sharing site. Using Flickr's tools, photos were tagged with labels, sorted into sets, textually described,

¹ <http://www.flickr.com/>

and visually annotated with notes. The organizational features of Flickr supported searching and selecting photos for analysis. Figure 4.3 shows a screenshot of Flickr that depicts some of the “coding tools” available such as visual notes, verbal description, tags, and multiple sets.



Figure 4.3 Annotated and tagged photograph in Flickr

Data were qualitatively analyzed using a grounded theory approach (Strauss & Corbin, 1998). The textual and photo data were open-coded and then refined to a set of themes. Matrices were hand coded. The analysis resulted in the identification of important ideas, supported by textual quotes and photo data.

4.5 Results

Participant behaviors and attitudes about mobile phones for the support of their romantic relationships are the heart of this study. However, as suggested by the

literature review, romantic relationships are intertwined with the demands of personal lives, families, and friendships. Also, mobile phone use occurs within an ecology of technologies. Thus the main results are prefaced by a general description of mediated technology use by the participants, highlighting mobile phones. Then results about mobile phones and CMC supporting personal lives, families, and friendships are presented to contextualize the main findings about romantic relationships and mobile phones.

4.5.1 Mobile Landscape of Bangalore

This section overviews the ecology of mediated technology use by participants, with emphasis on mobile phones. The purpose of this section is to characterize the placement of mobile technology in the cultural lives of these participants in Bangalore. The findings suggest that participants have close relationships with their mobile phones, partially driven by the ICT infrastructure. This snapshot provides important background information to the findings that are later reported about mobile phone use that supports intimate relationships.

A field notes excerpt profiling Shalini¹ introduces these results. Her story captures the web of ICT that is used to support a romantic relationship and that must suit a mix of circumstances, both modern and traditional. These technologies are also global: she met her husband “overseas” without leaving India.

Shalini has spent her whole life in Bangalore. She has seen the city change from a “small place” to one with “terrible traffic.” She and her

¹ The names of the participants have been replaced with pseudonyms, and some details have been altered or omitted to mask identities.

husband have a car and a motorbike. Her husband drives the car to work, and she takes the motorbike, except to work when she takes a “cab” (a company shuttle) to work at GTSC.

She and her husband met while playing online pool at Yahoo! Games. She noticed that someone with an Indian name, a rare sighting, was in the pool chat room, so they started chatting and hit it off. Her husband was working in Saudi Arabia at the time. Shalini says, “We spent two years as chat friends. We knew each other well, then we realized that we can’t live without each other. We’d call on the phone and send SMS—it was cheap for him. We have been together four years now.”

They were engaged online, having known each other solely from Web cam chats and phone calls. Their friends thought they were “crazy” to get married without knowing each other. The parents were against the match at first because they are from different communities. Eventually, they won their parents over, and they got married in a temple in Bangalore. After the wedding, her husband returned to work in Saudi Arabia, and she remained in Bangalore, living alone with her mother-in-law for over half a year—an experience she found difficult as a newlywed. Shalini and her husband still live with her.

Shalini is a self-described “tech freak” and gadget enthusiast. She has a Pocket PC phone that she uses also for taking photos or sending email. If she lost her phone, she says, “I’d be handicapped. I’d feel restless. It’s my ‘close friend’ that should be with me at all times.” She says she communicates with her husband “twenty times a day” through IM on the computer and phone calls, usually to check in with each other about small things like when they are coming home or to get a phone number.

Shalini’s story shows how her marriage was facilitated on a global scale by the internet and mobile technology. She and her husband still keep in touch throughout the day over the computer and phone on top of regularly seeing each other at home now, a multi-layer communication method that recalls Chesley’s (2006) work about intertwined family communication technologies. Shalini is a woman living in the midst of modernity, working at Microsoft, and with opportunities that put her in a digitally privileged situation. At the same time, she still copes with

traditional situations such as living with her mother-in-law. The technology in her life must work in concert with cultural contexts in order to support her relationships.

Shalini is passionate about technology, a characteristic of other participants as well. The participants often told vivid stories about their first mobile phones. Sanjay reported that he was “very excited” when his first mobile phone was gifted to him by his sister-cousin¹: “It was my first mobile, and I was searching for a job. So she thought it was good to have a contact number of my own, and you’re reachable at that number. I still remember the first day of using it, calling my father saying my sister [cousin] has given this as a gift to me.” The special occasion of that first phone was also recalled by Nitin, who talked about the prestige associated with mobiles:

It was a big show-off to have a mobile. I got [my first one] as a student in 2002....I bought my friend’s old one; it was a Nokia. I didn’t want to show off, but I also wanted my presence to be felt: “Yeah, I am also carrying a mobile.” It was a partial show-off. Or at least sharing your number. They may never need it, but still you give your number.

Other participants said that they were excited but also timid about using their first mobile. Manoj remembered that his first phone was a pre-paid plan, and it cost 4 rupees (about 10 cents) a minute to call out. He was “scared” to use it because of cost, but like Nitin, he did a little showing off by emailing his number to friends. Acquiring their first mobile phone can be a pivotal occasion for participants. The cherished first moment of ownership sets the tone for the close relationship that participants develop with their mobile phones, which, in turn, enable cyborg-style communication patterns.

¹ Cousins are often called brother or sister.

The first type of intimacy that participants experience with their mobile is the “constant companion.” Some of the participants have developed extraordinarily close relationships with their mobile phones, keeping them nearby at all times. Padma said she keeps her mobile with her “even in the bathroom,” poking fun at herself for the level of intimacy she maintains with her phone. Kiran sleeps with his mobile phone next to his pillow or in the crack between the mattress and the bed-frame. Uday, who purposefully keeps a beat-up mobile phone because of a previous mobile theft, also keeps his phone under the pillow. Uday’s familiar relationship with his “simple” mobile suggests that something other than fashion and trendiness is guiding the intimate relationship with the phone. In the results about mobile phone support for relationships, the premium placed on communication provides some explanation of why users are closely coupled with their phones.

The second type of intimacy with mobiles is the “living companion.” Mobile phones can be interpreted as living creatures because they are always kept on. Participants for the most part only turned the phone off when necessary such as on planes or at the hospital near medical equipment. About half the participants indicated they never turn off the phone or only on very rare occasions, suggesting it is very much a “living” device that is constantly connected and always available. Shalini even interpreted her mobile phone as a “close friend that should be with me at all times,” anthropomorphizing the device and expressing an emotional attachment. With the mobile as an intimate companion that is always on, the phenomenon of perpetual contact can be facilitated. In the later results, this issue is further explored.

The third style of intimacy that participants can share with their mobiles is to make them a “body part.” Some participants conceptualized the mobile as part of their bodies, bringing to mind the work of Oksman and Rautiainen (2003) that discusses Finnish children’s interpretation of the mobile phone as a body part. Participants sometimes used corporeal language to describe their mobile phone. Kiran, for example, literally described his mobile phone as “an extension of my body.” Other participants also used the words “cripple” and “handicap” to describe potential absence of the mobile, suggesting it has become a core part of their daily routine. As Manoj put it, “life would be back to zero” without his mobile, suggesting that he would have to re-learn how to go about life again in a kind of mobile physical therapy. A sharp learning curve would ensue if participants ever had to function without the phone. This metaphorical integration of the mobile into the body suggests how mobiles are an indispensable object for communicating with others.

This intimate connection with the phone can be credited in part to the participants’ post-paid mobile service plans, which are billed every month. The flexibility and increased cost of a post-paid plan might symbolize true arrival into middle-class success, indicating the freedom and advantages of unconstrained mobile use without worry about service suddenly cutting out from lack of credit. Post-paid plans also imply the user’s extensive need for a mobile phone and the availability of credit to support a billed account. These plans support the participants’ ability to intimately incorporate mobile phones into their communications repertoire and make it a living device.

Infrastructure also drives the development of an intimate relationship with mobile phones. All the participants required the telephone at work to communicate with customers. However, many of the participants did not own a telephone at home, relying solely on their mobile phones. The mobile phone was a key communication device, with all participants reporting using the mobile several times a day (except for Praveen, who had recently lost his mobile). As Padma noted, mobiles are critical for people like her who cannot have a landline because she lives in a hostel.

The preference for mobile phones in personal life is also driven by the still emerging computer infrastructure. In all of India in 2005, there were only 1.54 computers per 100 people (International Telecommunication Union, 2007). The IT professionals in this study have much better access than the average Indian to high-speed internet and computers through their workplace. All the IT professionals reported using the internet several times a day. But in non-work settings, the mobile phone is preferable for mediated communication because only eight participants had a computer in their home. This study did not probe on computer ownership, but the low level of ownership is partially explained by the easy access that the GTSC workers have to their own workstations at the office, sometimes including a second computer that they can “break” for testing purposes.

The GTSC participants in effect have free use of their work computers, and many of them spent extra time at the office to take advantage of the fast computers and internet connection to do research and self-study. Participants also used their work computers for IM: participant observation revealed that at least three of the

participants had several IM programs running simultaneously on their computer. This study did not deeply explore personal use of work computers, but based on interviews, it seems likely that these participants were like the office workers using IM described in Chapter 2 (e.g., Nardi et al., 2000) and “multi-tasking” by keeping IM programs open as they went about their work. This cursory finding suggests that CMC, especially IM, supports communication with social networks at least at work.

Participants in the study who did not have internet at home, and especially those who did not have internet at work, could get access at one of the many cybercafés in Bangalore (Figure 4.4). The two call center workers and the pharmacist especially relied on cybercafés for their internet needs. They did not require the internet for work so they used it less often, two of them about once a week, and one of them about once a day. Internet access can be purchased for roughly \$1 USD an hour at a cybercafé. These internet access points can range from shops that only have computers and internet access to those that offer other kinds of business services such as faxing, photocopying, or cheap international calls.



Figure 4.4 Cybercafé in Domlur

The participants in this study are not unique in their dependence on mobile phones. Mobile phone use is a common sight among the middle-class throughout Bangalore. In the Domlur neighborhood, home to many IT businesses including the GTSC office, white-collar workers are often seen using their mobile phones (Figure 4.5). And outside upscale shopping areas like the Garuda Mall, mobiles are standard accessories for middle-class consumers (Figure 4.6).



Figure 4.5 Man on street corner in Domlur using mobile phone



Figure 4.6 Woman outside Garuda shopping mall using mobile phone

The mobile has made its presence known in various consumer venues such as restaurants. In at least one branch of Pizza Hut, a middle-class restaurant that some of the participants patronize, a free mobile charging station is available for customers to feed their phones as they feed themselves (Figure 4.7). The charging station has a mix of plugs to fit different brands of mobile phones. Using the charging station requires owners to trust that their mobile phones are safe in the open and to separate from the devices. Given the signs warning customers to mind their mobile phone in other restaurants or coffee shops (Figure 4.8), charging a mobile in public in Bangalore seems to require a large measure of trust. For users who have a highly intimate and cyborg relationship with their mobile phones, only the nutritive needs of the phone may compel them to part from it, because the phone would “die” without food.



Figure 4.7 Mobile phone charging station in Pizza Hut

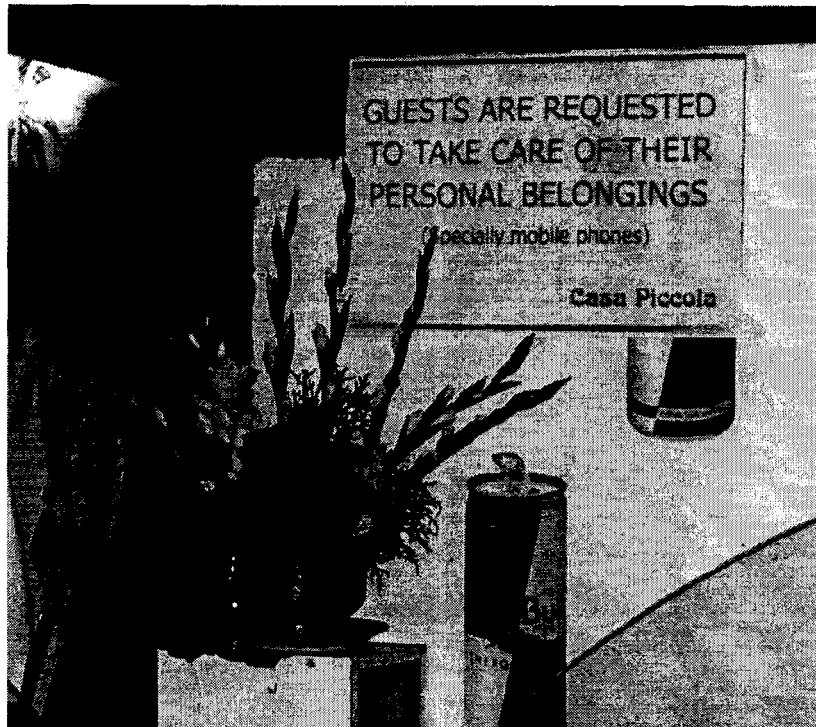


Figure 4.8 Sign at restaurant requesting guests to watch their belongings

This mobile landscape, made up of an ecology of ICT, is the backdrop for the participants to support their intimate personal relationships with mobile phones. As the literature about mobile phone use in digitally emergent settings had suggested, mobile phones are emotional focal points and symbols even as they reinforce existing communication infrastructures. Participants have special feelings about the mobile phone from the moment they first acquire it. They later develop intimate relationships with their mobile phones that can be characterized as “constant companion,” “living companion,” or “body part.” The dependence on mobile phones is motivated in part by the ICT ecology they are situated within. Personal fixed-line telephones are simply not available to some participants. And while the internet is readily accessible for most of them, it is not convenient for many of the participants to use computers

outside work. This environment of technology affects how participants choose to use their mobile phones.

4.5.2 Supporting Personal Life with Mobile Phones

As the previous set of results has established the technological context for mobile phone use, this section explores the personal context of mobile phone use by describing how participants use mobile phones to negotiate the demands placed on them in their personal lives by their jobs. Their work in busy 24/7 environments, sometimes on overnight schedules, creates complexities that ripple out to their relationships with loved ones. These life circumstances frame and constrain their use of mobile phones.

A field notes excerpt profiling Rohit prefaces these results. His story epitomizes important theoretical themes related to migration, inverted sense of time because of graveyard shifts, and the blurring of spatial boundaries through mediated communication. Within his shifted, hybrid space, he interacts with family, friends, and romantic partners with mobile phones and CMC.

Rohit came to work at GTSC, leaving his hometown of Delhi, over 1,000 miles away from Bangalore in the north. His parents keep in close touch with him, and in fact, his mother had recently stayed with him for a long visit.

He works an overnight shift. A friend from home is staying with him while he looks for a job in Bangalore. When Rohit comes home early in the morning, his friend is getting up to start his day.

Rohit has two mobile phones that he regularly uses: his main Bangalore phone as well as one with a Delhi number. The Delhi number is paid for by his parents because they have a plan that allows them to call him for free and without roaming costs. He normally carries only the Bangalore phone with him. He reserves the Delhi

phone for family calls and a few friends at home to save on the expense for his parents.

Besides these two phones, he also keeps two other mobile handsets on his kitchen counter (Figure 4.9). He has a handset that he keeps handy on the counter but does not use. The other handset he keeps in a basket, a broken Nokia that he had smashed in a fit of rage after a fight on the phone with his on-again, off-again girlfriend who lives in Delhi. The basket also holds a collection of chargers. These four phones were all purchased in the last five months. Rohit said that if I had met him earlier, he could have shown me even more handsets from when he switched from a GSM system to his current CDMA one.

Rohit has been in his on-again, off-again relationship for five years. They are now “off”—she is engaged to another man. This outcome, according to Rohit, suited his parents and his friends who disliked how the two of them fought. After the breakup, Rohit chatted over the computer with a friend about the latest quarrel he had with the girl, and the friend urged him to cancel her mobile subscription (which he was paying for). His friend told him to cancel it right now, “in front of him.” With the support of his friend, Rohit immediately called the mobile company to cancel but was not able to reach anyone.

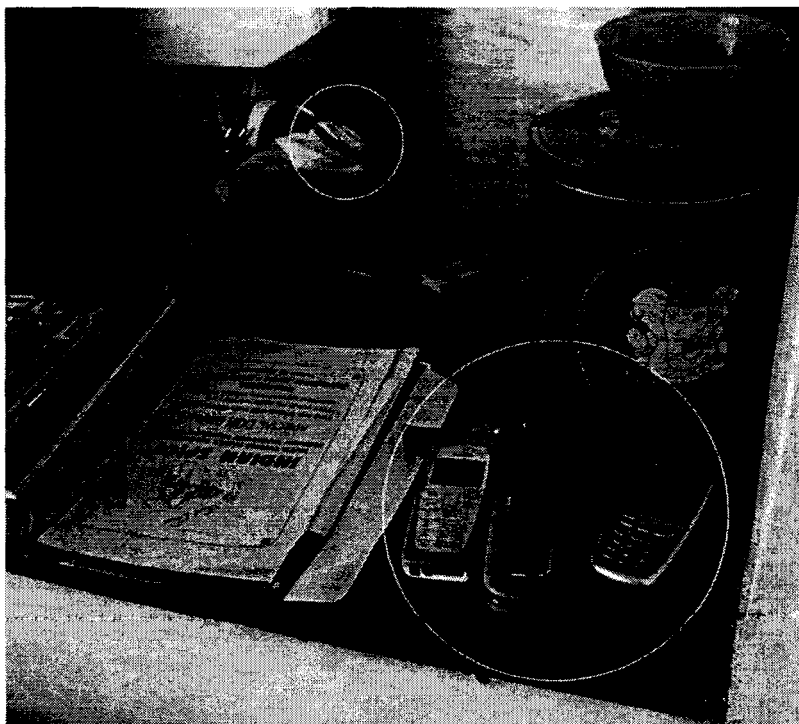


Figure 4.9 Rohit's four mobile phones on the kitchen counter

Rohit's story is typical of the participants. He came from elsewhere in India and stays connected with loved ones by mobile and CMC. Mediated communication blurs the spatial boundaries in his world. For example, his Delhi number connects him to family, and CMC brings his friend "in front of him." Human and machine boundaries also blur when he transfers feelings about his Delhi girlfriend onto the phone itself, by smashing it or by canceling the subscription. Other parts of his life are not so fused: his graveyard shift puts him out of sync with his visiting friend.

Like Rohit, most of the participants in this study have recently come to Bangalore for work. Aside from Shalini, a native of Bangalore, and Abishek, another participant who moved there as a child, the other participants have on average less than two years' experience with the city. To some extent, this migration for work opportunities is part of a historical trend. Some participants grew up moving: three participants had fathers with jobs that required frequent relocation (such as the military), and another participant grew up overseas in Dubai. However, the migration that the Bangalore participants are engaged in is novel in that they have moved domestically to work for global companies. Moving overseas is unnecessary to work for an international organization at a high-paying job. And as these types of jobs become more accessible, more people move away from home for career reasons, contributing to the hybridizing of Indian culture as various local particularities come into contact with one another and with global culture.

The migration of these young globalized workers signals a departure from home as well as an arrival in a new city. For some of the participants, moving away

from home is a significant milestone and a sign of becoming an independent adult. At the same time, they remain closely involved with their families. Raman, a 24 year old, liked living independently but also liked helping his family: "I am more responsible. I don't depend as much on my parents. I'm happy to support my family." This contrast of independence and family was also articulated by Rahul, originally from a neighboring state, Andhra Pradesh: "It feels good to be at home, because you can help them. Right now I can give them remote help but not immediate assistance." In his comment is the implicit belief that it is best to be at home, but even away from home, it is possible to contribute to the family. The blending of "home" and "away" in these statements suggest the conflicting feelings that participants have about their independence.

Coming to Bangalore for work entailed a number of personal "firsts" for the female participants. Padma, the youngest in her family, said that coming to Bangalore represented her first job ever, her first time living away from Delhi, and her first time living in a hostel. Her roommate, Maya, was also away from home for the first time. She is the older of two girls and considers moving away from home in Hyderabad, about 350 miles to the north, a growth experience for both her and her family: "I come from a close-knit family. My parents are attached to me, and I depend on them. [But] it's good for me to be away, because eventually I will move out after marriage. They need to learn to live on their own." Working in Bangalore affords these women new experiences that they value, in part because of comparisons with or implications for home. Maya misses her family but also thinks it is important to learn to be apart

because of inevitable life circumstances. The mixed feelings expressed by Maya, Raman, and Rahul motivate the mobile phone use that is reported later to support perpetual contact with families and bring them closer together as they remain apart.

Transitioning into the local culture of Bangalore is affected by language skills. Participants had no problems with the most essential life activities in Bangalore such as communicating at work or shopping. Workplace transitions were facilitated by the use of English—which all participants spoke—as the working language at international companies like Microsoft. And basic life activities like shopping can be carried out with English or Hindi, which all participants but one could speak or understand. But only about half of them had varying degrees of ability in Kannada, Tamil, or Telugu, meaning the other half were linguistically disconnected from native Bangalorean and South Indian culture. So, although they were able to function in Bangalore, some participants felt like they were cut off from the local culture.

Participants identified Kannada as the local language of Bangalore, in keeping with the rhetoric of state language and despite the multilingual reality. Kiran, whose two main languages are Hindi and English, noted in his interview that the language barrier made him an “outsider in town.” Non-routine tasks and conversation with local people were considered challenging by participants who did not speak Kannada. As a consequence of not speaking Kannada, Rohit, a native Hindi speaker, rode his motorbike carefully in Bangalore for fear that he would not be able to argue a traffic ticket with the police officer. This care contrasts with his willingness to ride “rashly” back home. Because of language barriers, some of these participants never feel “at

home” in Bangalore. This disconnect that they feel with the local environment encourages creation of “third spaces” where they do feel more comfortable, perhaps using technology to create a linguistically familiar space with loved ones from their “true” homes.

Other difficulties in settling into the local environment are caused by the participants’ jobs in 24-hour facilities working with overseas clients. Eight of the participants worked unconventional daytime hours with early morning or early afternoon start times. Twelve participants worked overnight. These unusual schedules are dictated by customer requirements, i.e., to support foreign customers during their normal business day. A post-colonial critique might view this state of affairs as an unequal relationship between oppressor and subaltern, but India has become a world-class player in information technology with new opportunities for its citizens because of this willingness to provide customer service at all hours. The subordination of Indian work schedules to overseas needs is ingrained enough that Abishek described his schedule from an American perspective: “I live in the Pacific Time Zone. I wake up at 3 a.m., which is 3:30 p.m. in India.” So he physically lived in Bangalore, while his mind was attuned to another location. In the globalized economy, Indians live a reversed schedule to support other nations.

The physical challenges of working overnight should not be under-estimated. Rohit called his overnight schedule “killing.” Several of the participants noted the disadvantages of the overnight schedule. Uday’s opinion is typical: “I keep awake at night. My friends don’t call because I’m sleeping. Weekends aren’t good because of

my schedule. And I sometimes work 14-16 hours a day.” Uday emphasized how friends do not call him for fear of waking him because he sleeps during the day. The overnight schedules cut them off from friends, and it is physically tiring. None of the overnight participants completely settled into a reversed schedule because they all had to accomplish life activities during the day such as shopping or calling friends. Rahul noted that, “It’s hard to do things in the day because your body is quite tired. Also when you go out to do things in the day, you might be tired and sound dumb.”

These shifted schedules naturally affect home life. Ambar, who worked a similar overnight schedule as her husband, Nikhil, still had to juggle her schedule to fit in chores. Every morning, she returned from work a couple hours earlier than her husband and napped until he arrived, at which point, she got up to make their breakfasts before they went to bed for the day. Overnight schedules disconnect people from the rhythms of local life and fracture behavioral patterns even within their own home. It is an uncomfortable gap in their lives that must be stitched closed or melded into a new space in order for them to maintain relationships with friends and family.

Overnight shifts carry enough disadvantages that all the participants viewed their overnight jobs as a temporary career move, not a permanent lifestyle. They aspired to move into daytime hours. The two call center workers, Nikhil and Ambar, saw making telephone calls on behalf of credit card companies as a way to make good money but not as a long-lived career. The work is stressful because of aggressive sales goals, a controlled environment where bathroom breaks are regulated, and a tough overnight schedule (see Taylor & Bain, 2005, for a discussion of call

centers). Call center work has captured the imagination of the Indian public because it entails young singles working late hours for high salaries. Gossipy newspapers often report on excessive partying and lurid scandals related to call centers, like the July 2006 murder of a BPO worker by her former lover in Bangalore (Bhattacharya, 2006).

Call center work, in many ways, is exotic and strange and leads to unexpected cultural and psychological changes.¹ Nikhil described adopting an English name, “Nick,” and an American accent when making his sales calls, practices that were encouraged during training for the benefit of North American customers. This cultural fusion sometimes leads to confusion, such as Shome’s (2006) example of Arnold/Anand who so identified with his American persona that he sometimes criticized family members with “that’s so typical of you Indians.” This hybrid identity shows the unexpected results of work in a globalized setting, where the role played by someone may be completely at odds with their physical reality. None of the participants had that level of cultural disconnect, but as noted with language and work schedule disjunctures, some felt like outsiders. They worked in Bangalore but did not feel like they “really” lived there.

GTSC employees should be distinguished from call center workers. Although they work overnight and answer phone calls from customers with technical problems, they have skilled technical jobs where graduate degrees are common. They perform technical troubleshooting and high-level problem-solving, and they work with only a

¹ For a fictionalized account of call center life, see the best-selling Indian novel, *One Night @ the Call Center* by Chetan Bhagat, published in 2005.

few clients at a time rather than cold-call hundreds of customers every night. All the GTSC employees were happy to be working for a prestigious, well-known company. Several participants said their parents were proud of their careers as well. This pride and pleasure made working overnight shifts worthwhile as a stepping-stone to even bigger things.

The personal lives of the participants provide important context for how mobile phones fit in with communication with romantic partners, family, and friends. Their positions as outsiders in Bangalore keep them from melding with the cultural landscape. The unease participants feel with local rhythms affects the relationships they have and their ability to interact with the local environment. In keeping with the hybridity model, participants can use these conflicting feelings of home/away, insider/outsider to create a new cultural identity that incorporates multiple viewpoints. And in this hybrid identity, participants have a new viewpoint that they can refine with continued comparisons with the culture they have come from and Bangalore culture. The cultural disjunctures and identity construction suggest participants need hybrid behavior with mobile phones to create new, blended spaces that soothe the tensions in their lives.

4.5.3 Supporting Families with Mobile Phones

The context of mobile phone use was established with the description of a broad mobile landscape and the social fractures caused by shifted schedules and newcomer/outsider status in Bangalore. This next set of results now examines how participants use mobile phones to support their relationship with family. Participants

move away from home, and use mobile phones to remain connected with their parents. In addition, parents often come to stay for indefinite periods. This fluid arrangement affects how mobile phones are used to communicate with family. These findings ripple through to the findings about romantic relationships because of the role of family in marriage that was described in the literature review.

A field notes excerpt profiling Kiran and Maya, two participants who are dating, introduces these results. Their story shows the fluid living arrangements that children have with their families. And it also shows how family relationships can affect a romantic relationship.

Kiran and Maya came from different parts of India to work at GTSC. It was a family connection that brought them together. Kiran talks about when they first met: "I bumped into her because her friend knows my sister, and my sister said I should meet her friend. They live in the same P.G. [paying guest accommodations], so when my sister-cousin joined Microsoft a month later, we all hung out as a big group. We played truth and dare, went for long walks. Neither of us had dated before. I was surprised to find someone."

They used to spend a lot of time together, especially hanging out with their close friend circle. Kiran lived with two roommates in his own rented house, which made it convenient for friends including Maya to stay over when they planned to hang out together for an entire weekend going to movies, trying out restaurants, or cooking. Besides being fun, staying over saved them from traffic problems and maximized precious weekend time for these overnight shift workers.

Recently, Kiran's father and mother came to stay with him indefinitely. His father is retired, and the parents split their time between their children's homes across India. Maya and Kiran spend less time together now for a number of logistical reasons. They both work overnight shifts, though not the same hours. It is difficult to find a time and place to meet besides the occasional 10-minute break for a walk at work. They cannot hang out in his house anymore and now Kiran also has to share part of his weekend day time hours with his parents.

The main barrier though is that his parents are against her, though Kiran is unclear what their reservations are besides that they come from different communities. Maya frankly realizes she is not a prospective bride because she is not of the same caste. Kiran wants to win his parents over because he will not marry Maya unless his parents approve. This is as much for practical reasons as it is for filial piety: "If the parents are against the girl I am married to then I would have to be the 'point man' between my wife and family," which would be uncomfortable. The process of persuading them is challenging partly because he is of marriage-able age, so his parents are "under pressure from their own relatives. Every single day there is a new girl."

The story of Kiran and Maya illustrates how family is intertwined in the lives of adult children and the conflicting feelings that the relationship can cause. Kiran is happy to have his parents with him and has a routine of waking up his mom by "bothering" her before going to sleep for the day. However, his parents' presence has also hampered his independent bachelor lifestyle of spending all free time with friends. He desires parental approval of his relationship with Maya, but he is also willing to continue seeing her despite their reservations.

Kiran's close family relationship is typical among the participants. Family plays a central role in their lives. All participants had both parents living, typically a working or retired father and a homemaker mother. (Six had mothers who worked outside the home.) Participants came from small families ranging from no siblings to three siblings. Some grew up in "joint" families that extended beyond the nuclear unit to include in-laws, e.g., a brother's wife, or grandparents. Many participants also described close relationships to cousins who were often like siblings. The many ties with family motivate close communication with them regardless of physical separation.

Participants have fluid living arrangements with their parents. Kiran's parents are indefinite visitors to his house, whereas Abishek still lives with his parents and sister in the home he grew up in. Three other participants had parental visits either recently or upcoming, with parents coming from as close as 300 miles away to as far as 1,800 miles away. Parental visits often necessitate lifestyle changes. Kiran had his roommates move out to accommodate his parents, and he also bought a car in part to make it easier for them to go places together as a family. With only his motorbike, he could only go out with one parent at a time. Manoj prepared for his parents' upcoming visit by moving out of his flat and into a house. Having parents come in and out of their lives suggests that, for some participants, living independently is a temporary condition that may be interrupted periodically by family visits. The participants acknowledged that they needed to get used to having their parents around, but they also felt hosting their parents was their duty especially because they could not be at home in their native places. This familial tie and obligation plays a role in how participants maintained their relationships with their family over a distance via mobile phone.

Mobile phones can complement face-to-face contact with family. Participants who live with family used the mobile phone to communicate with them for instrumental or logistical purposes, e.g., to check in about errands or to ask for information. Abishek, for example, used the mobile phone to stay in contact with his parents who were frequently outside the house supervising a construction project. The mobile phone kept them available to each other so that they could agilely exchange

up-to-date information for time-sensitive errands. Prasad, who roomed with his brother, regularly called him to coordinate on meal plans or shopping needs. Shalini, whose parents live in Bangalore but do not live with her, uses the mobile phone to supplement monthly visits with her parents. Her parents want to spend more time with her, and the mobile phone allows her to be in more frequent communication without having to cope with traffic. Mobile phones virtually tighten face-to-face family connections by making family members constantly available to each other. Families can operate even more closely in harmony by means of mobile communication, suggesting how perpetual contact can create networked sensibilities even within co-located families and illustrating a cyborg use of technology that breaks down boundaries to create new fusions.

The participants who live away from their families reported frequently communicating with them by mobile phone. In some cases, participants call home daily. Sanjay reported talking with home every day for at least five minutes, while Raman calls once or twice a day to talk for 10-20 minutes. Maya incorporates the phone call home into her daily schedule: "I call them everyday at 7:30 p.m. I walk into the office and start my day with a call to my family." Padma also communicates daily with her family with a "missed call" (calling and hanging up before the call is answered), which cues her parents to call her back. Such a system serves two functions: the parents call when it is convenient for them, and they absorb the cost of the call. Participants maintain frequent contact with their families regardless of physical distance, allowing them to reach out and be a family even if apart.

Participants interpret themselves as part of a family, and through mobile phones, they are able to maintain that identity.

The close relationship that participants maintained with their family over the mobile mimics a co-located relationship. In some cases, participants used the phone to regularly check in with siblings that they were “responsible” for. For example, Manoj has his sister routinely give him a missed call to let him know when she has arrived to her office elsewhere in Bangalore. They do not live together, but he shows his concern for her well-being and personal safety by asking her to update him on her whereabouts. Prakash similarly checks in with his brother in Delhi. Even though his brother is only one-and-a-half years younger than him, he feels responsible for him and worries because he lives on his own. He talks with his brother three to four times a day to chat or to ask if he has eaten. Mobile communication helps to keep a family together as a unit even when life circumstances separate them. When it would be just as easy to reduce ties to a family to a weekly phone call, these participants have maintained ultra-close relationships with their family that indicate care about their well-being beyond catching up on news. These intimate relationships and strengthened ties create a symbolic proximity to loved ones, a powerful example of how participants have used mobile phones to support relationships in the manner that they want rather than letting the forces of modernity break apart their family.

Participants often delimited their mobile phone use according to level of intimacy. Some participants said they preferred to use the mobile for family and email with far away friends. Some of the reasons for calling family rather than using CMC

may be practical. Maya says, “I don’t use email with my family because only my sister uses email, and she goes to a cybercafé.” Communication choices may also be driven by cost. For example, Prasad indicated that long-distance calls are too expensive to make gratuitously to all friends, but calling his mother is worth the expense. A more emotional motivation for “reserving” mobile phone calls for family may relate to the intimacy evoked by de Gournay (2002). Participants may choose mobile communication for their family because it creates the “inside space” described by Gergen (2002) where they can be together as a family. The mobile phone affords more intimate conversation because of the synchronous vocal connection. That the mobile phone is cradled in the hand next to the ear also makes it literally more intimate than CMC conducted at arm’s distance away on the keyboard.

When CMC is used for family communication, it is more of an additive communication that is used on top of mobile communication. Ankit notes that, “With my brother, I’ll use chat or IM. Mom and Dad will join him and tell him what to type. Sometimes I’ll do a voice chat with home, or we’ll finish off over the phone. We have a special 1 rupee a minute plan, and we’ll talk for a half an hour. My brother likes chat, and we’ll do it every alternate day.” Ankit’s description demonstrates the ecology of ICT that connects family. Chat is an important and fun way to communicate with his brother at home and their parents sometimes join in. But the phone remains the primary method of communication for his parents.

CMC is crucial for family communication in international relationships. Ambar uses the Web cam to chat with her sister in Sydney, Australia. She described

how Web cam chat was an opportunity to communicate cheaply as a family with her sister:

My sister is in Sydney. We keep in touch through chat. I can see her on Web cam and see her kids. She is five hours ahead of us. At least on Sunday, we'll go to an internet café with a Web cam. Mom in Nagpur will also join us. We chat for one-and-a-half hours. My sister will call, and we'll decide on the time. The three of us log in as a conference on Yahoo. Mom and dad will sit together at the cafe. Once a month, both will come. Before I came to Bangalore, Mom didn't know computers. I taught her how to chat. Now she teaches dad. I taught her ten or fifteen times before she understood. We type our chats. The voice connection is not clear, and sometimes we want to talk about something private. It's not comfortable to talk [in the internet café].

Ambar's story is an example of CMC weaving the transnational family together as part of a family communications repertoire. Her family is able to come together as a nuclear family once again even as they live in three cities in two continents. Ambar and her parents can also see the little children grow up overseas. Following media richness and social information processing theories, their textual Web cam chat creates an aura of intimacy and privacy without need of voice chat. In this case, using CMC facilitates an intimate group conversation that would be more difficult and expensive over mobile phones.

Family bonds among participants are tightly knit, and mobile phones strengthen that connection. Mobile phone communication is flexible enough to support the fluid nature of family living arrangements. CMC is used in a limited way implying both that technical infrastructure is not conducive to family CMC, and also that participants prefer the intimacy created by mobile phones. Reinforcing the CMC

and mobile phone literature, the findings suggest that mediated communication supplements face-to-face relationships and it also facilitates symbolic closeness for relationships that are far away. The perpetual contact that is afforded by mobile phones (and by Web cam chat for Ambar) makes families feel close even when physically apart. With daily phone calls home or to check in with siblings, participants can feel like they contribute to the family dynamic even from a distance. For families who are physically close, they feel even more in sync with one another. These findings about family communication bear on the later findings about romantic relationships because of the influence that family has on marriage. Despite appearing to be independent adults living on their own, participants are entwined with their families who still play central roles in their romantic decisions.

4.5.4 Supporting Friendships with Mobile Phones

Family ties were strengthened with mobile communication, regardless of distance. This next set of results shows a similar effect with social networks as participants keep in touch with old friends and coordinate with their Bangalore friends. In either case, they negotiate the challenges of work schedules that may be at variance with their friends'. The mediated communication that is used between friends provides information about how participants negotiate the hybrid space of Bangalore with an ecology of technology as well as about the social background against which romantic relationships are supported.

A field notes excerpt profiling Parag, Praveen, and Sanjay, three participants who are roommates, preface these results. Their story highlights the desire for close

friendships. Their friendship becomes like a surrogate family while they are away from home. It also illustrates how romantic relationships are woven with friendships even when girlfriends are not present.

Parag, Praveen, and Sanjay share a two-bedroom flat. Sanjay works for GTSC, and he got to know Parag when they were colleagues at another tech company. Praveen is a childhood friend of Parag. The three men are very good friends. In fact, Parag and Praveen share a mobile phone ever since Praveen lost his. They do not have a formal arrangement; the sharing (and sharing of the bill) is highly implicit.

They are away from home, but they have created a kind of nuclear family for themselves. Their doorway has sticky notes with their names on it (Figure 4.10), a post-modern interpretation of the marble plaques with family names that decorate the gates of houses in Bangalore. The sticky notes on the door symbolize the temporariness and mutability of this “family.”

Parag, Praveen, and Sanjay make most of their phone calls with one another to coordinate their activities, like going to the juice shop or meeting at Pizza Hut. These are very fixed, regular activities for them.

Parag and Praveen have girlfriends who live outside Bangalore (one in Ooty and one in Hyderabad). Sanjay communicates regularly with his family, especially his father. He does not have a girlfriend. His family wants him to be married, though. He is not interested: he wants to focus on studying for his technical certificates and do things that he is interested in, which he says he cannot do with a wife.

While they roam around like on trendy Brigade Road, they talk on the mobile phone with their girlfriends or their family. It feels like the girlfriends or family are right there because they are seamlessly talking on the phone as they also interact with one another and with their environment like when they shop at the mall.

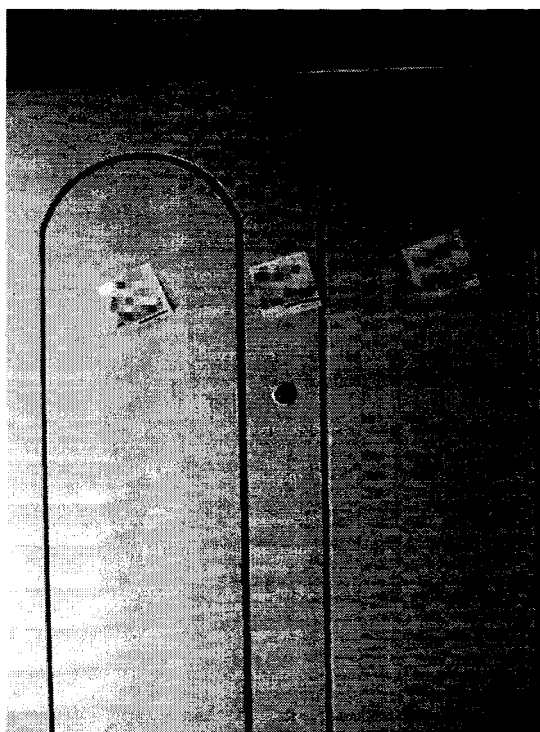


Figure 4.10 Parag, Praveen, and Sanjay's doorway

Parag, Praveen, and Sanjay have created a surrogate family for themselves, one that feels culturally familiar and can be an anchor point for their daily lives while they are away from home. They have regular, predictable routines, facilitated by mobile phones. On top of this secure friendship, other important figures in their life who are not in Bangalore are dialed in by mobile phone, so they can also have their girlfriends and parents with them in an “absent presence” (Gergen, 2002).

The intimate friendship between Parag, Praveen, and Sanjay is not unusual. These tight-knit “friend circles” mimic the closeness of a family. Many participants have a close, but small, group of friends because making and maintaining friendships is difficult for the participants who work overnight shifts. Maya said, “My weekend

starts Saturday evening and ends Monday evening. My friends are on the day schedule. I haven't seen a friend of mine except at the weekend." Several of the participants noted that their friend circles in Bangalore were small. They are relative newcomers to the city with time-consuming jobs, making it difficult to have the same kind of friend network that they had in places where they were more established.

Kiran, a very social person, observed that, "In New Delhi, I had a huge friend circle.

We kept in touch by phone. I don't make so many calls to my Bangalore friends."

With fewer friends in town, he makes fewer calls.

But for close friendships, mobile phones play a central role in communication.

Ankit described how his phone is an important, living connection with his friends,

like the "living companion" described earlier: "I never switch off the phone unless

I'm really tired. It's a vital link. I keep both phones active when I change numbers so

my friends know about my new number." Praveen, who had lost his phone, described

its absence as a sharp drop in his ability to communicate with friends:

[My friends and I] used the mobile daily and at night. Now, I'm not speaking to anyone. I lost my mobile one and a half months ago. After that I collected phone numbers and started using Parag's phone. There are 20 numbers I have in mind. I used Yahoo! Messenger for the rest. There were more than 100 numbers. Half of them were on paper. I talk to some people once a week. I'll give a missed call, [and they call me back].

Losing the mobile phone caused Praveen's contact with his social network to drop

significantly. To make up for it, he depends on Parag for his handset, and he depends

on friends to return his missed calls. This curtailed communication, particularly since

Praveen has no internet access at work and no telephone line at home, suggests that

the mobile phone is a cornerstone of his communications repertoire. Praveen's loss was not articulated as a handicap, but it recalled the earlier findings about people perceiving their mobile phones as a body part. The absence of the mobile required him to re-learn how to live by crafting a new communication strategy.

The heavy reliance on mobile phones by participants may also have unintended consequences for their friendships. For example, mobile communication may be reducing the number of face-to-face meetings. Prakash says that of his three or four college friends in Bangalore, "I'm not meeting them, just talking on the phone. I don't feel the need to meet them. I don't have much time. 'I spoke to him, what else is new?'" Interlaced within this comment is his overnight work schedule, which inhibits his socializing. However, his comment suggests some possible trends. The mobile phone may affect desire to meet face-to-face, hinting that meetings are ideal interaction with friends. But the comment suggests that mobile phones can provide as satisfying an interaction as a face-to-face meeting, at least when time is short—there is no need to catch up again in person. This type of behavior hints at potentially new forms of relating between users. Like CMC facilitating online communities, mobile phones may support a new kind of virtual relationship, for friends who are satisfied with exclusively mobile conversations.

The centrality of the mobile phone for the urban, middle-class has created problems for users. Building off of the mobile phone as a constant, living companion, it can also be a demanding companion. Rohit observed that the constant presence of the mobile phone demanded that calls be answered immediately—a potential problem

for overnight workers who are sleeping during the day, a prime time for receiving phone calls. The mobile could not be escaped because of social repercussions: “People expect you to be available all the time. You can’t avoid calls. If you put the phone in silent mode, people think you are ignoring them.” The urgency of answering the phone echoes the mobile phone literature about teens developing an etiquette that required immediate response to text messages. Presented in such a way, mobile phone users may need to choose between the demands of their mobile phone and social network and their personal need for privacy, silence, and sleep. This complexity reflects the literature about perpetual contact and increased intimacy encouraged by mobile phones. In the process, distinctions between self and other are slowly collapsing, bringing both the pleasure of close contact with others, as well as the discomfort of never being alone.

Besides close friends, participants maintain connections with a large social network of friends from school, college, and distant relatives. CMC is heavily relied upon as part of a larger communications repertoire to maintain these social links. Kiran says his group of friends uses a mix of voice calls, SMS, and distribution lists to communicate: “I have a distribution list for school friends and college friends. Everyone is married; we ‘lose’ about one a month. We use Messenger or chat. It’s the only way to communicate for us. Email and IM are the most common, then phone and SMS as a follow-up.” Participants use several tools in concert to craft a communication strategy with friends.

For keeping in touch with a large set of friends at once, participants used Orkut¹ and other social networking sites. Several participants mentioned Orkut as a tool that helped them keep in touch with an extended network of friends and to track birthdays. “Scrapping” or writing notes in each others’ scrapbooks on Orkut is an important way for some participants to keep up to date with friends.

For more personal communication, chat and IM are used. Prasad used chatting to connect with friends he does not often see: “I don’t chat at the office, except messaging with colleagues. On weekends, I chat with friends in different towns. We discuss stuff; it fills in the gap of spending time together. We’re discussing the same stuff [that we would in person]. You feel the same pleasure.” But for most, chatting occurs in parallel with other activities, echoing the multi-tasking reported in the IM literature. Several participants indicated that chatting is a side activity that fills in lulls at work. It is an extra form of communication rather than a dedicated one like a phone conversation. Padma further articulated that CMC is less intimate than in-person or mobile communication:

“I won’t do chatting as a core thing. I like browsing the Internet and chatting at the same time. At a restaurant, being with a friend is core. Discussions don’t happen on chat. I prefer having serious talks on the phone rather than on chat. It’s more personal. Someone sending a long email to me might get a call back from me. I need voice communication.... You chat while doing other stuff.”

CMC was investigated on the periphery of this study, so only preliminary interpretations can be made. But a rough picture suggests that CMC is less intimate

¹ <http://www.orkut.com/>

than mobile phones. CMC is used with a broad circle of friends but much less so with family or close friends. And it is sometimes used in a broadcast manner over distribution lists and Orkut scrapbooks rather than in a one-to-one connection of shared inside space like over the mobile. Chat affords more personal contact with friends, but is often a side activity, in which case it may affirm social connections like the “meaningless communication” observed by Johnsen (2003). In other words, a hierarchy of intimacy may be present in mediated communication that affects decisions about technologies that are used to communicate with friends. This hierarchy does not imply that CMC is used less than mobile phones or is less meaningful a form of communication. Rather, it suggests that mobile phones may be perceived as a more intimate space, a preferred choice for special relationships.

Friendships and social networks are supported by a large ecology of ICT. Mobile phones are central to the communication, especially for close friends. The constant, living presence of mobiles affords a perpetual contact with friends, sometimes to the point of disturbing personal rest. Communication with less intimate friends is often supported through CMC like Orkut, email, or chat. This is both for convenience, for example as a side activity at work, and also to efficiently reach out to many people at once. The multiple ways of using CMC and mobile phones to communicate with friends begin to hint at concentric circles of intimacy related to technology. These findings reinforce the interchange of the overall ecology of ICT that participants use, indicating that in cyborg manner, they are bridging distance with their friends with a range of tools.

4.5.5 Supporting Romantic Relationships with Mobiles

Friendships were supported by a breadth of ICT, including mobile phones.

This next set of results focuses back on mobile phones to support romantic relationships, the heart of this study. Mobile phones are used to maintain long-distance relationships and coordinate the instrumental needs of co-located relationships. Simultaneously, mobile phone communication symbolizes some of the changing practices related to marriage that are caused by global cultural flows.

Two field notes excerpts are presented here, one of a love marriage and one of an arranged engagement. Both love stories were facilitated by mobile phones, the first case an example of how mobile phone use can “circumvent” cultural traditions, and the second case an example of how mobile phones “reinforce” them. The first excerpt highlights the love story of Ambar and Nikhil. Their story reflects the close weaving of the mobile phone into all aspects of their romance from courtship to marriage. Mobile phone communication helped them to become closer, while keeping their relationship more discreet.

Ambar met her husband Nikhil in a C++ programming course in Nagpur. They were the only two students left in the course after their classmates dropped out, so the instructor told them to exchange phone numbers. If one of them could not come to class, they were to call each other and the instructor so that he would know not to come. Nikhil took that opportunity to call Ambar every day and talk to her for an hour at a time, even when she was too tired to carry on a phone conversation.

At the end of the course, they didn't have any reason to talk to each other any more. But Nikhil called one more time and proposed to her (making an offer of romantic partnership). Ambar, a beautiful and charming girl, had received so many proposals already, that she thought he was joking and didn't pay attention. The next time he

called, he asked her what she thought of the question he had asked. She didn't remember what he was talking about.

Eventually they decided to spend time with each other as friends and became romantically involved. During their relationship, Nikhil purchased his first mobile phone and got a pair of SIM cards, one for him and one for her. She already had a handset from her brother as well as a free connection from her employer. He told his family that the paired card was for his chum, Shankar. She told her family that the card was a freebie gift from Nikhil (although it cost him Rs.1,000 INR). They talked to each other 4-5 hours a night for free with these paired SIM cards. Because the calls were free, they would just keep the lines open between them even while going for a drink of water.

His parents were initially suspicious of her because during their C++ course, Nikhil had asked Ambar to call him on the family line at 7 a.m. every day to make sure he made it to class on time. The parents didn't understand who this girl was to call so often and so early. Ambar also said his family was traditional, and their girls wore salwar suits [loose-fitting tunic and trousers] while she preferred jeans. She said she won over his parents by dressing up in a sari and jewelry to his brother's wedding, garnering admiring comments from relatives. After that, they asked Nikhil if he wanted to marry her.

A year after marriage, Nikhil moved to Bangalore without Ambar to look for work. He eventually found work at a call center, making sales calls for a credit card company. Typical of call center work serving North America, he works the graveyard shift. Ambar followed him to Bangalore a few months later. She purposefully sought work at his call center so that they could have matching shift timings. They use mobile phones to coordinate with one another even though they work in the same building and despite having to check in their phones with security when working. They have developed a system of missed calls and SMS to communicate about their movements.

Ambar and Nikhil's story reveals the tension his parents felt toward their close relationship, pre-marriage. However, mobile phone communication allowed their relationship to strengthen without conspicuous family phone use, a similar finding to the literature about teenagers and privacy in the home. They discovered innovative use for the mobile phone, e.g., with the paired SIM cards that allowed them to talk for

hours for free. The mobile phone helped them bypass their parents and construct their own romantic relationship outside of cultural expectations.

The second field notes excerpt profiles Prakash, who is engaged to a woman introduced by his family. Although he will have a “traditional” arranged marriage, his courtship has been conducted almost exclusively through mobile phone conversations. He has spent only two days with her because they live in different cities.

Prakash is engaged to be married with a girl who grew up near his native place, a small village of 300 people. Their mothers are best friends, and their brothers are best friends, so the close family connection made the match desirable. He and the girl knew each other in their school days, but they have not communicated as adults.

When the parents proposed the match, Prakash and the girl spent one day together in Delhi before agreeing to the engagement. The engagement ceremony happened in his absence, and his father called him to let him know when he was engaged. Since the engagement in October 2005, he has spent one additional day with her to see a movie and to celebrate a cousin’s birthday; otherwise they have nurtured their entire relationship through the phone because she lives in the north while he remains working in Bangalore. They plan to live together in Delhi after the marriage.

Prakash calls his fiancée once or twice a day except on Saturday, his day off where he catches up on sleep and recovers from a week of working overnight shifts. They have a regular phone routine: “I call her in the evenings at 8:30. When she’s not with friends, she’ll call me from work. We talk for 20-30 minutes or an hour. We talk about what’s happening with family, what she’s doing for our marriage plans, our future. Maybe we’ll talk about what’s going on at home.”

The phone is a cornerstone for their relationship because he doesn’t have other experiences with her. He says they have a better understanding of each other because of their mobile conversations. They used to talk for shorter periods of time, but now they talk for longer, partly because they are more comfortable with one another and also because they have wedding plans to make. They do not use other communication means: “We don’t email or chat because we talk.”

Prakash knows his fiancée best through their mobile phone conversations. The mobile allows them to become better acquainted and helps them to make practical plans for their marriage, making the physical distance between them less of an issue. Without the mobile phone, he might not have had much contact with her prior to the wedding, perhaps causing pre-wedding discomfort and requiring post-wedding courtship.

Taken as a pair, the stories of Ambar, Nikhil, and Prakash suggest that mobile phones are a valuable component of modern romantic relationships and that marriage is often the unstated goal of romantic relationships. Before specific behaviors with mobile phones are described, the participants' relationship with the institution of marriage, including arranged marriage, should be characterized to contextualize the impact of mobile phone use on romantic relationships. The results show that mobile phone use helps anchor participants within the shifting cultural landscape, supporting non-traditional romantic relationships including distributed relationships and those that go against parental wishes.

Marriage is a significant part of life for all participants, sometimes with a sense of inevitability. As expressed by Rohit, "Marriage will happen if you want or don't want it." Regardless of its imperativeness, the meaning of marriage varies for each participant. For some, a life companion is the purpose of marriage. Abishek's sentiment reflected that of several others: "Marriage is important at some point in life. I don't want to be alone. I want company." Others viewed marriage as part of the Indian social structure. According to Maya, "Marriage is an integral part of life. If

you have a good partner, your life will be smooth. Divorce is not possible for a girl. I will have to get married.” Packed within that statement is the belief that females in particular must be married. And also, it suggests that the marriage stakes are high for a female. Taken together, these statements suggest that marriage is on the participants’ minds as a necessary and important life stage, something that will occur regardless of exactly when or how it does. This attitude frames their interactions with romantic partners.

Arranged marriages still figure prominently in the lives of the participants. Nitin had an arranged marriage, and both Vijay and Prakash are engaged to women who were introduced through their families. Aside from one participant who was against arranged marriage for himself, most of the participants who were not already married or engaged acknowledged that it was a possible outcome for them. Some were actively involved in some stage of arranged marriage proceedings, e.g., fielding prospective matches introduced through their family.

However, as suggested by the literature, the openness to arranged marriage was accompanied by individualistic sensibilities. Participants considered arranged marriage to be just one option in a multiplex approach to finding a mate. The single participants anticipated using a combined approach to finding a mate including on their own, through social networks, or with the aid of parents and close relatives. That is, they anticipated selecting a romantic partner instead of having one chosen for them. Given that seven participants are currently in romantic relationships that were initiated for love and without immediate view to marriage (including Nikhil and

Ambar), as a whole, these participants are demonstrably open to other forms of dating and partnership. All but four participants have had some experience with a committed relationship outside the bounds of an engagement or marriage, e.g., dating. However, this romantic experience is also limited: with the exception of one person, participants reported experience with at most one or two romantic relationships including the person they are engaged or married to (if applicable). This finding supports Sachdev's (1998) findings about the conservative nature of dating experience.

Some of the participants expressed particular wishes about the kind of person they would like to be with that reflected their culturally blended outlook on life. This desire for a partner who combines dual qualities, reflects the hybrid nature of participants' identities as well. Ankit described an ideal partner as someone who was not concerned entirely with "cosmopolitan matters. I want a good girl, who is balanced. I want someone who can go to a party and the temple." Likewise, Abishek sought a girl who occupied a liminal space, "someone who is open, not too conservative and not way too modern with a 'model attitude'....A 'model attitude' is someone who is working hard but not on the ground or in touch with reality. A conservative attitude is someone who asks everyone for their opinion." These desires for partners who can fit in multiple worlds or combines two polar characteristics reflect the realization that they themselves are caught between spaces.

As the literature review suggested, marriage is still a family-oriented affair. Although this issue was not deeply probed in this project, most participants implied that their parents were inclined towards finding matches for them, but they were also

open to their children finding their own partners. Implicit within this belief, though, was the parents' right of approval. Rahul's statement about his parents' role in any future marriage was exemplary: "They're OK with me selecting a girl for myself. If I can manage to get a girl for myself, and we are agreeing to get married, I think they will agree. They know me quite well and they are confident—not that I'm always right—but they are confident about what I do. If I can't find someone, I leave it to them." The role of parents in a marriage decision process was not considered intrusive. Participants wanted their parents to approve their romantic decisions before moving forward. Kiran, who wanted to marry Maya despite his parents' objections, still wanted to win over his parents before making any further commitment to her.

The separate forces of parental wishes and individual desires have hybridized in some cases into overlapping searches by parents and child for a potential partner. Padma reported that her parents were giving her the latitude to find her own partner in her own way, "but if the person doesn't come in six months or one year, they'll look for me." Her parents are currently fielding proposals, passing on to her good offers. Although she trusts her parents' judgment, she is apprehensive about arranged marriage where "you might have two or three meetings of one to two hours each. That's six hours to decide if you want to marry. That's weird to me." The duplex search process described by Padma suggests the construction of a new approach towards romantic partnership, where parents and child negotiate on finding a mate. This compromise between parents and child is mirrored in romantic relationships

supported by mobile phones, where the child facilitates a clandestine romance with the mobile and then negotiates with parents about marriage.

Taken together, these participant attitudes and experiences with the marriage process suggest that they are grappling with the milieu of changing marriage practices that were characterized in the literature review. Participants respond to these changes by blending together modern, individual sensibilities with traditional marriage customs. For example, they accept arranged marriage and family involvement in their romantic relationships but also desire to find their own partner and experiment with dating. These impulses may be blending together into a marriage process that allows children to exert some independence and parents to vet potential matches. For participants who are physically separated from their family, this hybridized marriage approach is essential. With families virtually connected, working as an integrated unit towards finding a romantic match requires mutual understanding by children and parents.

With these attitudes toward romantic relationships in mind, this section now turns to how participants who are currently romantically involved support their relationships with mobile phones. Because none of the participants who were “single and ready to mingle” described an active strategy for finding dates or mates (for the most part they were “open” to finding someone, but not actively seeking), the remainder of the results focuses exclusively on the nine relationships that participants are involved in. Consequently the results focus on mobile phone use in courtship and support of existing relationships rather than on “lekking” or attracting mates.

A characteristic shared by these relationships is distance. Although three of the relationships are co-located in Bangalore, the other relationships including one of the marriages are not. However, even the three co-located relationships have elements of distance: Shalini's marriage was facilitated over the internet; Nikhil had left Ambar behind in Nagpur as he was job hunting in Bangalore; and Kiran and Maya are separated by scheduling and parental issues. In some ways, distance seems to become meaningless as a barrier to romance: Parag's girlfriend proposed to him (made an offer of romance) just as he was about to move from Hyderabad to Bangalore. The mobile phone is a critical tool for closing the distance for such relationships.

Physical distances are bridged with a web of mobile phone communication and CMC. Nitin's wife is in her hometown studying for her degree, so they are separated until she finishes. Their engagement, arranged by parents, was also spent apart. He had known her when they were in school several years ago but not as an adult, so he used the mobile phone to get to know her better. "I didn't know anything about her. So I gave her a mobile. We talked for five hours a day." With the mobile phone, Nitin became better acquainted with his future wife, and today it remains the main connection between them. They have only lived together about 20 days in their half-year marriage. For them, the mobile phone is a vital link, "a god-sent gift; it has held us together." They talk for one to two hours a day, keeping their bond alive. Nitin also supplements their communication with email: "I'll collect sentimental things from the Internet and use them to compose an email for her." Like Prakash,

whose main interaction with his fiancée is through mobile communication, Nitin in some ways knows his wife best through the mobile.

The couple with the greatest physical distance between them may in fact be among the closest. Vijay's fiancée is currently working in the U.S. He works overnight in Bangalore, and she works during the day, so their schedules are compatible in that they are roughly working and sleeping at the same time. Their matched schedules allow them to communicate two hours a day via chat, Web cam, or mobile phone calls, which is probably the most communication experienced by any physically separated couple in this study. But despite the relative ease and naturalness of communication, it is not smooth. Later in this section, a fight Vijay had with his fiancée over communication is described. Regardless, this example suggests that space and time intertwine to affect communication in a relationship, where time may make distance less acute.

Gaps more problematic than space are also addressed with mobile phones. Kiran and Maya, who are experiencing some disapproval from his parents, cannot spend much time together. Three months ago before his parents came to live with him, Kiran and Maya would meet daily. The mobile phone, Kiran said, was only used for coordinating. But now, the mobile phone has become an increasingly vital connection between the two of them, allowing them to exchange messages or chat for five minutes. Further, they can have extended conversations over the phone when they cannot meet in person. In this example, the mobile phone component in their relationship evolved in functionality to support meaningful communication, whereas

earlier it was for coordination. Judicious mobile phone use helps this couple to spend time together despite parental objections.

Mobile phone communication also holds together relationships that may have been torn apart by social pressures. Praveen's girlfriend lives apart from him in Ooty (about 150 miles from Bangalore). They met during college and have been friends for over five years. Although both sets of parents like their children's partners for the most part, he says the main objection on both sides is religion: she is Christian while he is Hindu. Conversion is a tense topic for his family. His parents, he says, warn him that converting to Christianity will cut the couple off from his relatives. The distance between the couple and their religious differences has made the mobile a necessary tool. Within the inside space of the mobile conversation, the couple have a private space where they can be together free from any social pressures. In that mobile space, they do not have religious differences or concerned parents: they can just be "themselves," a constructed, partial identity without problems.

Mobile phone communication can keep relationships secretive, essential for participants from conservative families and in keeping with the literature that suggests dating relationships are often clandestine because of social norms. Raman is shy about his girlfriend in Mysore (about 90 miles away) and has told only a few close friends about her. She was a friend of a friend whom he had helped with some career advice, and their relationship later blossomed. In his family, love marriages are rare, so he planned to gently break the news to his parents and request that the families meet and give consent. Given the distance between Raman and his girlfriend

and the delicacy of their relationship, the mobile phone is an important, subtle communication link. But like Praveen and his girlfriend, within the inside space of the mobile phone call they can be together without concern about what others think.

Couples often create virtual “paths in the grass” with their mobile phone. These are routines that are marked out through fixed calling habits, which in many ways re-create the closeness and synchronization that might have occurred in face-to-face presence. For example, Raman described the routine he shares with his girlfriend over the mobile phone: They talk when he goes home in the evening. He wakes her up in the morning. She chats with him on the way to work on the bus. It can be argued that the mobile phone has increased intimacy for them because they could not have so much contact without it, especially separated in two cities. Its constant presence affords them a perpetual contact. Co-located couples can also perform a mixed-mode version of paths in the grass. Nikhil and Ambar use the mobile as a way to do things “together” yet separately, such as when they go shopping but each want to look at their own things. The mobile allows them to connect and reconvene seamlessly when they are shopping. Perpetual contact makes shopping feel like a shared experience even when done separately.

The mobile phone can be used to express emotions implicitly, apart from verbalizing some sentiment. Rohit’s story in 4.5.2 Supporting Personal Life with Mobile Phones detailed how he had smashed his phone after a fight with his girlfriend, making the phone a convenient physical outlet for his anger. Mobile phones can also be subtle sites for emotional expression. Vijay detailed through his mobile diary a

quarrel with his fiancée over her calls bothering him at work. She had made repeated calls which he did not answer because he was taking a nap at work. She eventually sent a text message saying she was unhappy about having to call nine times and not getting a response. They exchanged two text messages each over the next half hour in a small SMS fight over why he was not answering the phone, with the conclusion being a message from him saying he was switching off his mobile because he was irritated. He told her later he would not talk with her for an entire month to make his point, though he admitted he might call her sooner if he missed her. Turning the phone off is the digital equivalent of giving someone the cold shoulder. By closing off this important communication channel with his fiancée, Vijay was strongly expressing his displeasure. This equation of mobile phone with the state of the relationship itself bolsters Sarch's study (1993) of fixed-line telephones and relationships.

Mobiles can also be used to express romantic sentiments. Ambar entered Nikhil's mobile phone number in her phonebook as "aaNikhil" so that he is the first entry that appears. This alphabetical trick makes his number quickly available, suggesting the frequency that it is dialed and presumably the place that Nikhil has in Ambar's heart. Text messages can also be a site for nonverbal expression of romantic feelings. Maya's mobile phone has limited memory for text messages, so she deletes all but the most precious ones. She has saved some from Kiran which are "confiding" or that arrived at special times. For example, she saved a "forward" from him that came on Valentine's Day. In the Indian context, "forwards" are like "hallmark" text

messages (Ellwood-Clayton, 2003): canned text messages with a generic joke, image, or sentiment that is authored by an unknown source and suitable for sharing with multiple others. Maya thought it highly unlikely that the message was original to him (and it was not), but she saved it because of the sentiment it represented. Like store-bought greeting cards, these forwards can be sentimental objects, suggesting the mobile phone can be a site of meta-communication, where the literal content of the mobile phone is not as meaningful as the implied message. Such practice is reminiscent of “gift giving” where messages create social networks of reciprocity among English teenagers (Taylor & Harper, 2003) or the “meaningless” joke emails that Norwegian teens send to strengthen social ties (Johnsen, 2003).

Mobiles themselves can also represent close connections, a perpetual contact with a loved one. Nikhil says his mobile phone is “an addiction. If I forget it, I think about it. I get scared. My wife’s not connected with me. It’s our only connection. I worry when the battery is low.” On the surface, Nikhil’s comment suggests a dependence on the mobile device itself, but on a deeper level, it is the connection to his wife that he is “addicted” to. The mobile phone enables a closeness that users enjoy and come to need—becoming cyborg as much with the affordance of connected presence as with the superficial connection of the device to their person.

Taken together, these results suggest that mobile phones are used in particular ways to support romantic relationships. The phones offer most utility for relationships that are experiencing challenges of distance, whether they are cultural gaps or physical separation. They are also a platform for expressing emotion even beyond

explicit communication such as battles over answering the phone or sentiments attached to canned text messages. Given that participants' romantic relationships are complex and evolving and that their attitudes about marriage are evolving along with social norms, the mobile phone is a core tool for bridging gaps and supporting relationships that do not fit neatly into a model of co-located and family-approved.

4.6 Discussion

This study makes empirical support for the theory of mobile hybridity by examining how participants support their intimate relationships—particularly romantic relationships—with mobile phones. Considering this use through the hybridity frame, which subsumes cyborgs as technological hybrids, allows an interpretation of mobile phones as extensions of self, particularly for negotiating the many cultural disjunctures experienced by participants related to distance and time.

Besides examining the area of romantic relationships that was addressed by the research questions, the results considered technical environment, personal careers, friends, and family. These technoscapes and ethnoscapas are part and parcel of romantic relationships in India. As marriages are intended to tightly knit together families, romances often are not dyadic affairs but ones that involve the consent and approval of parents. The space of a romance may be private, especially in a secretive relationship, but to progress to marriage, the relationship becomes entwined with family. And while relationships may not have an immediate view to marriage, the issue hovers as part of the cultural atmosphere.

Many of the emergent behaviors that were reviewed in the results are existing behaviors given new life over the mobile phone. For example, the willingness of two lovers to talk with each other for literally hours at a stretch is affordable only through special mobile calling plans and with personal lines. It would be much more difficult for young people to talk for hours on a shared fixed-line telephone without getting in trouble for generating a huge bill, hogging the phone, or having an unseemly pre-marital love affair. Another example can be seen in the young people roaming the town with friends. The additional “absent presence” of mobile phones allows friends and family to be remotely dialed in—in essence, participants can enjoy their company even when apart.

Mobile phones have become an integral part of the romantic process for urban middle-class people. The participants in this study used mobile phones to coordinate meetings or to have deeper conversations that fill in the gap of physical absence. Given their packed schedules and the physical separation inherent to many of their relationships, participants rely on the mobile phone for their courtship. Lengthy and regular phone conversations seem to be a central part of the courtship story for these participants.

As the courtship stabilizes into a long-term relationship or marriage, participants continue to use the mobile phone with their partner. The phone is used by co-located husbands and wives to touch base and coordinate activities. Mobile phones are used by physically separated partners to keep each other up-to-date on their news and plans, in a sense to keep the relationship living and growing. Prakash’s daily use

of the phone with his fiancée illustrates the instrumental aspects (planning the wedding) as well as the sentimental side (forming an impression of his wife-to-be) of the conversations. For lovers in more secretive relationships, mobile conversations keep them under the radar if parents are living with them.

Mobiles are a stage for emotional expression and nonverbal communication such as switching off the phone to express anger or saving text messages for sentimental reasons. The nonverbal elements of the mobile can also serve to create expectations for the owner through the obligations of perpetual contact. Users want to keep their mobile phones on to provide a living link to their friends and family. But they also want occasional peace from the phone, at least to sleep. It is not possible to turn off the phone without missing a call, and not answering the phone may create the social impression that the owner is avoiding a call. A mobile phone is like a “living companion” that carries its own emotions and meaning, demands constant attention, and cannot be turned off.

Participants use mobile phones as part of a larger repertoire of ICT that is primarily based on the internet including email, chat, and Orkut. Each of these tools serves a different function and is not completely interchangeable. For example, Orkut is for updating broad social circles on personal news, whereas chat is for filling in gaps in time with small talk. CMC also supplements mobile phones in romantic relationships, with some email and IM exchanged depending on the circumstance. At work, when both parties have easy access to computers, IM might be a communication tool of choice.

Mobile phone communication addresses the changes that are experienced in modern romantic pairings. As noted in the results, the relationships in this study all had some element of physical separation or cultural gap such as parental disapproval. While these kinds of problematic relationships have long existed, mobile phones may make such relationships more sustainable, by bandaging problems of distance or social disapproval. The ubiquity of the mobile phone helps lovers to “stay in touch” all the time because of the constant presence of the device and the perpetual contact afforded by it. The personal and portable nature of the mobile muffles secretive relationships from families or allows a couple that cannot overcome parental objections to stay in an indefinite holding pattern. These social changes shaped by mobile phone use are symbolic of the issues of hybridity and cyborgs. The remainder of this discussion frames the results through the theoretical lens of hybridity and cyborgs.

4.6.1 Hybridity, Cyborgs, and Mobile Phone Use in Bangalore

Hybridity suggests that a comfortable space and identity can be constructed regardless of where a subject is. Polar identities can be synthesized, and a stable point, if only for a short while, can be fixed within constantly moving global cultural flows. Identity is no longer mapped to a physical location; rather, it is constructed from multiple cultural elements. Mobile phones play a crucial role in this new identity construction. Tata Indicom’s advertisement for international roaming—“Your address becomes a 10 digit number”—exemplifies the spirit of mobile hybridity (Figure 4.11). The suggestion is that no matter where in the world they find themselves, mobile

phone owners with international roaming are always “home” if others can call them. In other words, regardless of where the mobile phone owner is physically, if they are connected to their social networks, they are home.



Figure 4.11 Moving advertisement for international roaming in Bangalore

Similarly, the participants in this study are in multiple places and time zones, especially the night shift workers. They travel between home, work, and other haunts daily, a micro-version of the journey that they made from home to Bangalore. They have cultural roots in one place and have spread rhizomes to Bangalore. As such, participants want and need to maintain connections with home, while they want and need to live an independent life in Bangalore. The liminal spaces created in these twin desires are navigated with technology, especially the mobile phone.

Participants are hybridized with their mobile phones. Their bodies have metaphorically absorbed the mobile phone, amplifying their powers and allowing them to perform previously impossible feats. By selecting and applying technology, participants construct an identity that improves on their natural state and allows them to overcome hierarchies or barriers that do not make sense to them. When the cultural landscape is confused and fractured because of global cultural flows, cyborg thinking becomes essential for repairing and constructing identities. With cyborg use of mobile phones, participants bridge the distance between home and Bangalore and support new approaches to relationships that better suit the liminal space that they occupy.

Mobiles are an indispensable part of urban life, a technology that is intimately integrated into the habits of life. The perpetual contact afforded with social networks changes the way users think about themselves and their relationship with others. The participants in this study would have different lives without the mobile and would have to re-learn how to live without it. They would have to learn to set plans in advance, find fixed-line phones, and perhaps have diminished relationships with their friends, family, and lovers who are far away because of decreased frequency of contact. Cyborg use of mobile phones changes the way people relate to one another, recursively creating hybrid patterns of behavior.

The resulting changes in behavior are not all positive. Perpetual contact has made mobile phones “demanding.” Participants feel some pressure to answer the phone to avoid missing important calls or nonverbally signaling a snub. Overnight workers are sometimes disturbed in their daytime sleep by unwanted calls, or they

miss out on social calls because their schedules are out of sync with friends. Despite these negative aspects of changes in behavior, participants have a generally positive feeling about the transformations caused by mobile phone use.

As predicted by hybridity and the literature about mobile phones diminishing the borders of personal and private spheres, mobile phone users blur distinctions between themselves and others. The mobile phone brings people together in perpetual contact and makes them accustomed to having their social networks on hand and on call. Nikhil's description of the anxiety he experiences when he forgets the phone and is cut off from his wife beautifully captures the interconnectedness that mobile phones can facilitate. In physical terms, Nikhil is no further apart from Ambar without the mobile phone, but psychologically, he feels lost. To him, mobile phones have forged the virtual connection with his wife into a tangible object.

Likewise, mobile phones create a symbolic proximity with families. Participants may be separated from their families, but they can still behave in a family-oriented manner with mobile phones. They call to express care, inquire about mundane activities, and otherwise re-create the experience of physical family life over mobile phones. This behavior blends real space behavior with a digital medium, creating a new way of interacting with families. With mobile communication, participants can remain closely involved in their family as they work in Bangalore, hundreds of miles apart. What might be perceived as broken pieces of the family are connected through networked communication technology.

Participants use mobile phone communications in cyborg manner to construct identities that better reflect their interpretation of themselves. Participants are caught between two or more places: home and Bangalore and other places that are important to them. With the mobile phone, they craft overlapping, multiple identities that blend these spheres. By making a daily call home, participants are able to be with family, as they simultaneously have their independent social life with close friends. And following hybridity, the life that is crafted with Bangalore friends sometimes mimics family: they do everything together and have a fixed program of regular group activities like hanging out or going to the juice shop. In absence of a physical connection with family, one with friends is substituted.

These mobile relationships with family and friends ripple through romantic relationships. Families, who have long influenced marriage decisions, remain influential because they are involved in participants' daily lives via mobile phone. Thus, marriages arranged at a distance are possible outcomes. The physical separation of children from their families also gives them more latitude to explore other romantic possibilities such as dating. Even so, families are still a reference point, e.g., when participants seek parental approval of a romantic partner or when they hide a relationship. Mobile phones have not changed the nature of romance, but they have changed its forms.

Cyborg use of mobile phones supports participants' occupation of liminal cultural spaces related to romance. Dating, which is not a parentally or culturally encouraged activity, becomes much more possible with mobile phones. Participants'

lives in Bangalore sometimes placed them in situations where love might happen unexpectedly such as Kiran and Maya meeting at work or Shalini and her husband meeting in a game chat room. Mobile phones and other mediated communication create a safe, private “inside space” to explore the romance that satisfies cultural demands for discretion regardless of frequency or duration of contact. Couples that have non-normative relationships, e.g., Praveen’s inter-religious romance, especially benefit from this space that is free of external judgment.

The mobility of participants brought about by migration and symbolized by their phones serves to encourage distributed romantic relationships. Although long-distance romance is not new, it is made more viable through mobile phone communication. These relationships feel living and synchronous despite the distance because of the frequent, constant, and perpetual contact of mobile phones. These relationships are the product of hybridity: the natural result of physical separation and ubiquitous technology.

In this study, cyborg users did not uproot cultural paradigms related to romance. They refined already present behaviors, such as dating, into new forms with their mobile communication. On the surface, participants who pursued relationships contrary to parental wishes appeared to be breaking norms. But when examined more closely, these relationships are actually naturalized into traditional cultural models, such as getting parental approval (with as much negotiation as necessary) before marriage or hiding the relationship to avoid dissent. In other words, participants kept

families involved in their independently formed romances, even if it was by virtue of keeping the relationship under the radar to avoid upsetting parents.

The epitome of technological hybridity is use of the mobile phone as an emotional surrogate. Mobile phones particularly evoke emotional attachment because they are small personal devices that intimately extend the body. Emotions can be nonverbally expressed over the mobile, like Maya's sentimental saving of a Valentine's Day forwarded text message from Kiran or Rohit's attempt to express displeasure with his old girlfriend's engagement to another man by cutting off her mobile phone service. The transferring of feelings to the mobile phone makes it a living device, one that resonates with the users' own emotional and mental state.

Conceiving of the mobile phone as an intimate, integrated part of the user reframes the user relationship with mobile phones and consequently with social networks. Mobile phones synthesize users' lives and repair and bridge gaps. They are used to construct new identities, fuse polar identities, and overcome barriers. They give users super-human powers to design new ways of living that try to better accommodate the multiple, evolving concerns in the cultural landscape of Bangalore. In this conceptualization, mobile phones are a necessity and one that users learn to live with. They are not a binary object that can be turned on and off, they are a "permanent" part of life. With this permanence comes a user appreciation of the benefits of the mobile phone and its extension of social network that also leaves room for a critical relationship with mobile phones. The cyborg user acknowledges

intrusions, demands, and downfalls of mobile technology by coping with them, developing new behaviors, or severing the mobile phone—and learning to live again.

This nuanced acceptance of the mobile phone allows users to develop symbiotic relationships with the device and consequently with social networks and loved ones. This blend of human and machine, coupled with an ever evolving cultural landscape, is the foundation of the theory of mobile hybridity. The next chapter articulates the theory of mobile hybridity.

Chapter 5: Conclusion: A Theory of Mobile Hybridity

In the introduction, mobile phones were characterized as a new type of technology: unlike preceding technologies such as the computer or the fixed-line telephone, mobiles are portable and personal and support perpetual contact. These unique features of the mobile phone have allowed it to be adopted in a cyborg manner. Although not literally melded with flesh, the mobile phone becomes like part of the body: its regular presence and the constant connection it affords can change how users think about their relationships. Mobile phone users are no further than a phone call away at any moment from the social network represented by their phone book. By virtue of the mobile phone as an extension of the body, they can “reach out and touch someone.” For people who are uprooted because of the demands of work or education, the power of the mobile phone for supporting intimate relationships is highly significant. Within the inside space of a mobile phone call, a relationship can vibrantly exist irrespective of the constraints placed by physical space, time, or cultural expectations.

Mobile hybridity, the term for this new theory of phone use by mobile people, has nuanced meaning. “Mobile” refers to the global cultural flows that keep users in motion as well as the close use of mobile phones to navigate the resultant culturally blended, cosmopolitan spaces. “Hybridity” refers to the new pressures and demands of cultural hybridity, cyborg-like relationships with mobile phones, and the capability of mobile phones for blurring physical and cultural gaps. Mobile hybridity, then,

refers to support of the fluid and mobile identities that people may have in culturally hybrid spaces with mobile phones. In the context of this project, personal and romantic relationships are supported over a distance with a mobile phone.

The utility of the mobile phone for supporting the intimate relationships, identity, and sense of belonging of people in transition is at the heart of the theory of mobile hybridity. First, migrant people miss friends, family, and romantic partners who are elsewhere, and they may feel culturally at variance with their current location. In addition, global cultural flows keep cosmopolitan social networks in perpetual motion, intensifying feelings of uprootedness. In these fluxes, mobile phones can serve as an anchor that allows users to support their core relationships regardless of their physical circumstances. The mobile phone creates a stable point that bridges physical distances and bypasses cultural gaps and allows users to feel “at home” wherever they may be. The “stable” position is actually a constantly moving, blending, and re-blending of cultural influences, such as blurring together home and a physically separate location, that allows users to be in two or more places at once, geographically or culturally.

Framing this dissertation with the theory of hybridity and the sub-theory of cyborgs supports a new way of thinking about mobile phones, one that acknowledges the special ability of the mobile phone to transform the communication experience while also situating it in a broader context. The mobile hybridity theory extends previous work in three important ways. First, mobile hybridity re-interprets mobile phone use by situating it within a broader landscape of mediated communication and

cultural phenomena. Whereas most studies emphasized mobile phone use as a separate technology, relatively few have considered mobiles as a component of a larger web of technology (e.g., Miller & Horst, 2005b; Slater & Kwami, 2005). By using the lens of hybridity, this study articulates a way that mobile phone use can be natural, organic, and flowing as it is integrated into a cyborg body and a larger ecological network of technology. Mobile phones are not fetishized in this model, thus other forms of ICT such as the internet are part of a broader web of technology used by “cyborgs.”

Second, mobile hybridity notes how the ability of mobile phones to blur the lines between public and private spaces or home and work (e.g., Gant & Kiesler, 2001; de Gournay, 2002; Chesley, 2005) can be a crucial advantage in broader distributed spaces, for example, allowing migrant single people to be independent yet virtually co-located with faraway family. Mobile hybridity also highlights the fusions of traditional and modern cultures that occur through intimate mobile phone use (e.g., Yoon, 2006) as a new way of relating in the cosmopolitan world, one that allows users to satisfy multiple urges and demands.

Third, the cyborg perspective of mobile hybridity supports a model of mobile phone use that explains both the intimate connection users have with the phone and the changed perceptions users have of their relationships. Mobile hybridity extends Oksman and Rautianen’s (2003) conceptualization of the mobile phone as a body part. Besides acknowledging the mobile phone as an intimate device, the cyborg perspective folds in elements of Katz and Aakhus’ (2002) perpetual contact,

Licoppe's (2004) connected presence, and Gergen's (2002) absent presence. Cyborg theory expands the current field of mobile phone research by explaining not only how people use mobiles to relate to one another, but also how they construct new meaning around distance relationships through the phone, e.g., feeling close to someone who is thousands of miles away by virtue of a tool that extends the body. They value the phone for its connectivity with key relationships.

Mobile hybridity explains how mobile communication supports intimate relationships in a way that is both familiar and novel. As suggested by the literature and from the Bangalore study, romance can bloom over computer networks and go through stages of flirting, falling in love, etc., that parallel real space or are mixed mode. Mobile phones are used to support romantic relationships in a way that feels natural. The Bangalore participants' use of mobile phones organically stemmed from common impulses such as wanting to spend time with a romantic partner, even while separated. The cyborg relationship with mobile phones combined with perpetual contact allowed users to have their loved ones on hand at all times. This feeling of "closeness" despite physical gaps makes mobile support for distance relationships compelling for users.

Mobile hybridity bridges physical distances by blending multiple spaces together and creating a sense of intimacy, at least within the "inside space" of the mobile phone call. As observed in the Tashkent and Bangalore studies, intimate relationships are redefining themselves with a geographic variable. That is, close relationships are increasingly characterized by physical movement and separation,

either locally, nationally, or internationally. Traffic congestion may keep friends from seeing each other face-to-face regularly, or work or education may demand relocation to other cities. But the physical separation disappears in light of the connected presence afforded by an entire communications repertoire of mobile phones and computers. The feeling of being constantly connected makes people feel closer to the family they left behind or to a romantic partner they cannot be with. In addition, the inside space created by mobile phone conversations and other mediated communication gives users a contained, virtual location to share and be together. In this way, mobile phones users create symbolically proximate relationships with the people they care about, transcending geographic definitions of proximity.

In some cases, the closing of a physical gap can ripple into a new cultural opportunity. The Tashkent study revealed that young people were allowed more freedom to roam with the mobile phone. This pattern of behavior was a significant change for parents who have a cultural preference for protecting their children, especially girls, by keeping them at home. Mobile phones can thus fuse together the seemingly divergent interests, desires, and impulses of parents and children to create new ways of living.

While mobile hybridity closes physical gaps, it circumvents cultural ruptures related to “irregular” relationships. The Bangalore study had identified participants whose romantic relationships were under cultural pressure, represented as parental disapproval based on preference for arranged marriage, fear of premarital misbehavior and gossip, religious differences, or other personal reasons. With the

mobile phone, users were able to keep their relationships discreet and under the radar if desired, rather than addressing their problematic nature. Within the confines of mobile communication, two romantic partners could be together, free of any cultural or parental issues at least for that moment. Further, they were able to sustain their relationships, constructing a way of being that goes beyond expectations of “acceptable” relationships.

The closing of physical distances and bypassing of cultural gaps point at the hallmark of mobile hybridity, which is to create stability by blurring boundaries and creating third spaces. The literature had suggested how mobile phones create hybrid spaces by fusing together private and public space, home and work, separate cultures, self with others, and even self with phone. In these previous studies, the changed behaviors were often analyzed on a small scale of personal life, e.g., the locally situated world of teens. In this project, these fusions are extended to cosmopolitan life in India, balancing the needs of working in an international time zone, living independently in Bangalore, remaining remotely involved with family, and communicating with a non-local language. These hybrid spaces may create new challenges for users—such as when work intrudes on their off-hours—but they also suggest the strength of mobile hybridity, which is to construct new identities and ways of living that resist polarity. The creation of liminal spaces is not just a byproduct of multicultural contact but a necessary anchor point for mobile, migrant people. This skill is especially important when two forces seem to conflict, yet the

user belongs to both sides. Users can craft who they want to be and transcend previous categorical boundaries.

Given the powerful hybridizing “feature” of the mobile phone, mobile hybridity also describes the confluence of feelings and spaces in the device itself. Several Bangalore participants described the mobile phone as part of themselves or as an intimate object. This highly personalized conceptualization of the mobile phone is not due to fetishism. Rather, the mobile phone symbolizes functions, relationships, and values that users prize. For example, having a constant connection or approximation of physical closeness with a sweetheart can be so appreciated, that a user transfers some of that good feeling to the phone itself. Users also take the mobile phone to be a personal space and thus resent the intrusion of telemarketers, who cost them time that could be spent on more valuable activities or relationships.

The mobile phone as an emotional and spatial site supports the cyborg interpretative frame. Mobile phones can be anything for users: they extend the body, make social networks constantly accessible, represent key relationships, and stitch together gaps of time and space or patch cultural tears. The Tashkent and Bangalore studies revealed gradual shifts in collective feeling about mobile phones that hint at the organic way that mobile phones entangle themselves into users’ lives. Several of the early adopters of mobile phones talked about the “show off” nature of the device. In those early days, mobile phones were prestigious, costly accessories that had to be conservatively used and were a “foreign object.” But the narrative expressed by users today is one of need. Mobile phones are near-invisible and compulsory objects for

living in the urban, middle-class world that have been absorbed into communication routines.

The “compulsory” nature of the mobile phone should not be characterized as a byproduct of ubiquity, e.g., it is not necessary in the same way as electricity, which underpins modern society. Instead, mobile hybridity suggests that mobile phones are necessary because they support fluid identities—an essential function within a constantly shifting cultural landscape. Mobile phones simplify the work of occupying multiple cultural spaces, by allowing users to be a synthetically whole identity that suits many situations rather than having to constantly choose between completely separate, polar identities. Mobile hybridity supports a recursive relationship between users and technology: mobile phones create liminal spaces (such as a temporary reprieve from parental disapproval) that may need to be addressed by the user, but they also close other gaps (such as physical separation). Likewise, users are constantly refining and re-defining their mobile identities to respond to new situations.

The theory of mobile hybridity explains how mobile phones support fluid and mobile identities. The small sample, qualitative studies in Tashkent and Bangalore identified patterns of use that are transferable to other groupings of migrant, urban, middle-class users, in digitally emergent settings and elsewhere. Given globalization and media networks, many places, particularly urban areas, are internationally connected. Combined with the migration of people, increasingly more opportunities exist for culturally blended spaces. Mobile hybridity provides an avenue for understanding how people use mobile technology to actively construct identities

that negotiate the multiple spaces they occupy. Mobile phones act as an anchor point for users in culturally shifting settings.

Another component of mobile hybridity that is transferable to other settings is the cyborg use of mobile phones that influences interpretation of and interaction with space and time. This change in the way users experience the world extends their ability to have relationships with others, including those who are far away. Theorizing the mobile phone as a part of the body frames the device as a core component of how users relate with others and how they conceptualize their relationships. Mobile hybridity explains how mediated communication within intimate relationships is not an interaction with a device, but an interaction with a loved one. The phone is like a permeable membrane that allows users to feel close to others without obtrusive technology.

A last element of mobile hybridity that applies to other settings is the nuanced consideration of agency behind mobile phone use. Mobile phone use occurs in concert with many other influences, so most social change cannot be directly or solely attributed to it. But it is useful to consider that as cyborgs, users choose whether to adopt the mobile phone to support old habits, such as families staying in contact, or to transgress norms, such as forming romantic relationships outside parental approval. Mobile hybridity suggests that cyborg users behave in ways that support iterative, gradual social changes, such as the slow erosion of the arranged marriage institution as young people experiment with romantic relationships of their own choosing.

This project has suggested several broad lessons, including the utility of looking beyond restrictive, binary views of the world. Hybridity counters the binaries that are often used to structure technology studies such as considering people to be users or nonusers. As both the Tashkent and Bangalore studies revealed, there are users who do not own mobile phones, and nonusers who regularly access technology, such as Ambar's mother, who Web cam chatted with her daughter in Australia with repeated help before mastering the technology. Mobile phone ownership is also more complex than the user purchasing the phone. Mobiles may be gifts from a friend, relative, or romantic partner that may come with political strings attached, e.g., a parent who restricts the child to making mobile calls only to home. Like the third space of hybridity or the synthesizing ability of cyborg identity, technology use can also stretch beyond presence and absence. Following Hayles' (1999) "flickering signifier," pattern and randomness allows for a multiplex consideration of technology use, where use cases that do not neatly fit into a category still offer value. Identifying these new hybrid styles of use acknowledges that they in turn may calcify into categories to be resisted, in keeping with hybridity as iterative process.

Another proposition of this project is the utility of conducting social studies of technology use in the so-called developing world. As the literature and the studies in Tashkent and Bangalore suggest, users—regardless of the state of development in their country—find meaningful and emotionally satisfying uses of mobile phone technology. Economic and human development benefits of digital infrastructure may seem to be "more important" than non-serious, personal uses of technology, but a

post-colonial perspective argues that social studies must be conducted there.

Developing countries are more than sites of economic development in the Western context; they also have rich cultures and traditions that exist regardless of any artifacts of global modernity. Some users may attend only to economic or educational aspects of their personal technologies, but others are also as likely to incorporate them into their personal relationships. It is critical to understand not only how formerly peripheral societies benefit materially from technology, but also how they construct meaning and constitute their identities from it.

This project also suggests that studies in digitally emergent settings can offer important insights into mobile phone use. When technology is unevenly diffused, the need for an ecological study of mobile phone use becomes apparent. Mobile phone use in these settings cannot be fully examined without contextualizing the other information and communication technology choices that are available. Studies in more developed settings can also consider the larger ecology of ICT because users in the wild rely on a variety of communication methods and modes, depending on the situations and their needs. This project focused on developing countries, but in the right context, anyone might be digitally emergent, for example, while traveling to a strange city away from familiar resources. Looking at how communication occurs within an entire repertoire of technology sheds lights on how users weave together and “design” their communication experiences depending on the tools they have access to.

Finally, this project reinforces the unique contribution that post-colonial spaces can offer to mobile phone studies, in particular, revealing the cyborg possibility of new identities that transcend existing power structures. Following Sandoval's (1995) assertion that subaltern users are experts at assimilating cultural influences, this project found Bangalore users to be cyborg and skilled at integrating mobile phones into the communication routines of their intimate relationships. Post-colonial people already contrast themselves with former colonizers and are accustomed to selectively localizing elements of foreign culture. Studying how cyborg users respond to technology is a different proposition than simply looking at how tasks are completed with the device. It also promotes consideration of the reflexivity of the relationship between user and technology, where users construct their identity through the mobile, and the mobile influences user conceptualization of the world. Other environments that have historical power hierarchies similar to post-colonial spaces, such as immigrant enclaves, diasporic communities, or indigenous minority populations, can also lend themselves to user studies that incorporate a political perspective on technology's effect on user consciousness.

Besides these broad lessons, this project also suggests interesting future directions for research. First, a transnational component to mobile studies would be highly relevant given the global cultural flows that people occupy. Many people emigrate or spend extended periods overseas for work or schooling, making a study of transnational network communication is crucial. The Bangalore study included participants with overseas experience or relatives who lived abroad. People who are

globally dispersed have different communication needs than those who are in their national setting. They may wish to connect with separated family members or other immigrants from their culture. Overseas workers may send remittances home. Romances may also be conducted transnationally such as through online matchmaking. As noted in 2.3.4 Transnational Expression over CMC, how people make these connections over mobile phone is less studied despite the growing use of mobile phones particularly among immigrants from mobile-friendly cultures such as India and the Philippines. Mobile studies can consider how people connect with family and friends back home, as well as how they tap into a broader national identity.

Another direction for research includes studying the integrated, synthetic use of communication technology. Besides considering communications repertoires, researchers can examine how several modes and technologies of communication may be used together to support a relationship. Some examples of such integrated use include the girl in Tashkent using the computer and her mobile at the same time to send and receive SMS to save money and face. Another example are the Bangalore users Shalini and Vijay who used several technologies to support their romantic relationships, such as sending photos by email, being available through IM, Web cam chatting, and making regular phone calls. Understanding how users “cobble together” and construct their own systems with canned tools can provide important insight on the most satisfying aspects of communication.

This project developed a theory of mobile hybridity that can be expanded to other settings. It also employed concepts such as hybridity, cyborg theory, global

networks, digital emergence, and communications repertoires that can enrich future mobile research projects. The purpose of this work is to encourage continued theorizing about mobile phone use. Besides describing the fascinating outward markers of mobile phone use, research can posit how these intimate devices change the way people conceptualize their relationships and the world around them. Such theorizing explains, for example, how a mobile phone, which ostensibly allows complete freedom of movement, may in fact be an anchor point for life. Thinking beyond “needs and tasks” and considering broader meanings of technology for users can support design of the mobile phone that makes it culturally meaningful and emotionally satisfying.

Bibliography

Adams, R. G. (1998). The demise of territorial determinism: Online friendships. In R. G. Adams & G. Allan (Eds.), *Placing Friendship in Context* (pp. 153-182). Cambridge: Cambridge University Press.

Adesina, W., & Ayodele, O. (2004). Shaping the internet for match-making/dating: A challenge for the contemporary Nigerian family institution. *African Sociological Review/Revue Africaine De Sociologie*, 8 (2), 103-114.

Albright, J. M., & Conran, T. (2003). Desire, love, and betrayal: Constructing and deconstructing intimacy online. *Journal of Systemic Therapies*, 22 (3), 42-53.

Alexander, M., Garda, L., Kanade, S., Jejeebhoy, S., & Ganatra, B. (2006). Romance and sex: Pre-marital partnership formation among young women and men, Pune district, India. *Reproductive Health Matters*, 14 (28), 144-155.

Aminuzzaman, S., Baldersheim, H., & Jamil, I. (2003). Talking back! Empowerment and mobile phones in rural Bangladesh: A study of the Village Phone Scheme of Grameen Bank. *Contemporary South Asia*, 12 (3), 327-348.

Ammons, S. K., & Markham, W. T. (2004). Working at home: Experiences of skilled white collar workers. *Sociological Spectrum*, 24 (2), 191-238.

Anderson, B. (1991). *Imagined Communities: Reflections on the Origin and Spread of Nationalism* (2nd ed.). New York: The Alpine Press.

Anzaldúa, G. (1999). *Borderlands/La Frontera: The New Mestiza* (2nd ed.). San Francisco, CA: Aunt Lute Books.

Appadurai, A. (1996). *Modernity at Large: Cultural Dimensions of Globalization*. Minneapolis: University of Minnesota Press.

Ashcroft, B., Griffiths, G., & Tiffin, H. (Eds.). (1995). *The Post-Colonial Studies Reader*. London and New York: Routledge.

Audinarayana, N., & Krishnamoorthy, S. (2000). Contribution of social and cultural factors to the decline in consanguinity in South India. *Social Biology*, 47 (3-4), 189-200.

Axup, J., Viller, S., MacColl, I., & Cooper, R. (2006). Lo-fi matchmaking: A study of social pairing for backpackers. In *Proceedings of UbiComp 2006* (pp. 351-368). Berlin and Heidelberg: Springer-Verlag.

Balsamo, A. M. (1996). *Technologies of the Gendered Body: Reading Cyborg Women*. Durham, NC: Duke University Press.

Banerjee, K. (1998). Marriage change in rural India, 1921-1981. *History of the Family*, 3 (1), 63-94.

Banerjee, K. (1999). Gender stratification and the contemporary marriage market in India. *Journal of Family Issues*, 20 (5), 648-676.

Bangalore. (2006). In *Wikipedia*. Retrieved November 30, 2006, from <http://en.wikipedia.org/wiki/Bangalore>

Baron, N. (2004). See you online: Gender issues in college student use of instant messaging. *Journal of Language and Social Psychology*, 23 (4), 397-423. Retrieved December 7, 2006, from Sage Journals Online

Batino, C. S. (2005, July 25). RP still world's text capital. *Philippine Daily Inquirer*, p. B1. Retrieved November 20, 2006, from http://money.inq7.net/topstories/view_topstories.php?yyyy=2005&mon=07&dd=25&file=2

Baym, N. (2006). *Speaking of the Internet*. Presented at University of Washington, Seattle, WA, April 17, 2006.

Baym, N. K. (1998). The emergence of on-line community. In S. G. Jones (Ed.), *CyberSociety 2.0: Revisiting Computer-Mediated Communication and Community* (pp. 35-68). Thousand Oaks, CA: Sage Publications.

Bell, G. (2004, May). Insights into Asia: 19 cities, 7 countries, 2 years—What people really want from technology. *Technology@Intel Magazine*. Retrieved April 27, 2006, from <http://www.intel.com/technology/magazine/research/rs05041.pdf>

Bell, G. (2006). No more SMS from Jesus: Ubicomp, religion and techno-spiritual practices. In *Proceedings of UbiComp 2006* (pp. 141-158). Berlin and Heidelberg: Springer-Verlag.

Ben-Ze'ev, A. (2004). *Love Online: Emotions on the Internet*. Cambridge: Cambridge University Press.

Berg, S., Taylor, A. S., & Harper, R. (2003). Mobile phones for the next generation: Device designs for teenagers. *Proceedings of CHI 2003 Conference on Human Factors in Computing Systems* (pp. 433-440). New York: ACM Press.

Bhabha, H. K. (1994). *The Location of Culture*. London and New York: Routledge.

Bhat, D. (2006, September 19). More than half of all 10-year-olds have own mobile. *The Times*. Retrieved October 1, 2006, from <http://www.timesonline.co.uk/article/0,,2-2364978,00.html>

Bhattacharya, M. (1999). Tradition and change: a study of the impact of migration and modernization on the structure of Bengali marriage. *Journal of the Indian Anthropological Society*, 34 (3), 201-220.

Bhattacharya, R. (2006, July 27). Murdered BPO worker was held in sex racket last year. *Kolkata Newslite*. Retrieved January 23, 2007, from <http://cities.expressindia.com/fullstory.php?newsid=194526>

Bittles, A. H., Coble, J. M., & Rao, N. A. (1993). Trends in consanguineous marriage in Karnataka, South India, 1980-89. *Journal of Biosocial Science*, 25 (1), 111-116.

Blom, J., Chipchase, J., & Lehikoinen, J. (2003). Contextual and cultural challenges for user mobility research. *Communications of the ACM*, 48 (7), 37-41.

Bly, S., Schilit, B., McDonald, D. W., Rosario, B., & Saint-Hilaire, Y. (2006).

- Broken expectations in the digital home. In *Extended Abstracts of CHI 2006 Conference on Human Factors in Computing Systems* (pp. 568-573). New York: ACM Press. Retrieved March 14, 2007, from <http://doi.acm.org/10.1145/1125451.1125571>
- Boneva, B., Quinn, A., Kraut, R., Kiesler, S., & Shklovski, I. (2006). Teenage communication in the instant messaging era. In R. E. Kraut, M. Brynin, & S. Kiesler (Eds.), *Computers, Phones and the Internet: Domesticating Information Technology*. New York: Oxford University Press.
- boyd, d. m. (2004). Friendster and publicly articulated social networking. In *Extended Abstracts of CHI 2004 Conference on Human Factors and Computing Systems* (pp. 1279-1282). New York: ACM Press. Retrieved December 7, 2006, from <http://doi.acm.org/10.1145/985921.986043>
- Brewer, J., & Hunter, A. (1989). The multimethod approach and its promise. In J. Brewer & A. Hunter, *Multimethod Research: A Synthesis of Styles* (pp. 13-28). Newbury Park: Sage Publications.
- Briggs, C. L. (1986). *Learning How to Ask: A Sociolinguistic Appraisal of the Role of the Interview in Social Science Research*. Cambridge: Cambridge University Press.
- Brooks, L., & Bowker, G. (2002). Playing at work: Understanding the future of work practices at the Institute for the Future. *Information, Communication, and Society*, 5 (1), 109-136.
- Brown, B. (2001). Studying the use of mobile technology. In B. Brown, N. Green, & R. Harper (eds.), *Wireless World: Social and Interactional Aspects of the Mobile Age* (pp. 3-15). London: Springer.
- Bryant, J. A., Sanders-Jackson, A., & Smallwood, A. M. (2006). IMing, text messaging, and adolescent social networks. *Journal of Computer Mediated Communication*, 11 (2). Retrieved November 20, 2006, from <http://jcmc.indiana.edu/vol11/issue2/bryant.html>
- Bucher, H.-J. (2004). Is there a Chinese internet? Intercultural investigation on the internet in the People's Republic of China: Theoretical considerations and empirical results. In *Proceedings of the 4th Conference on Cultural Attitudes Toward*

Technology and Communication (CATaC '04) (pp. 416-428). Murdoch, Australia: Murdoch University.

Byrne, R., & Findlay, B. (2004). Preference for SMS versus telephone calls in initiating romantic relationships. *Australian Journal of Emerging Technologies and Society*, 2 (1). Retrieved November 20, 2006, from <http://www.swinburne.edu.au/sbs/ajets/journal/V2N1/V2N1-4-Byrne.htm>

Caldwell, J. C., Reddy, P. H., & Caldwell, P. (1983). The causes of marriage change in South India. *Population Studies*, 37 (3), 343-361.

Calling an end to poverty. (2005). *The Economist*. Retrieved November 22, 2006, from http://www.economist.com/business/displayStory.cfm?story_id=4157618

Castranova, E. (2005). *Synthetic Worlds: The Business and Culture of Online Games*. Chicago, IL: University of Chicago Press.

Chakraborty, S. (2006). *Mobile phone usage patterns amongst university students: A comparative study between India and USA*. Unpublished master's thesis, University of North Carolina at Chapel Hill, NC. Retrieved March 14, 2007, from <http://etd.ils.unc.edu/dspace/bitstream/1901/3111/1/sayanchakraborty.pdf>

Charlton, T., Panting, C., & Hannan, A. (2002). Mobile telephone ownership and usage among 10- and 11-year-olds: Participation and exclusion. *Emotional & Behavioural Difficulties*, 7 (3), 152-163.

Chaturvedi, V. (2000). Introduction. In V. Chaturvedi (Ed.), *Mapping Subaltern Studies and the Postcolonial* (p. vii-xix). New York: Verso.

Chesley, N. (2005). Blurring boundaries? Linking technology use, spillover, individual distress, and family satisfaction. *Journal of Marriage and Family*, 67 (5), 1237-1248. Retrieved November 28, 2006, from Blackwell Synergy

Chesley, N. (2006). Families in a high-tech age: Technology usage patterns, work and family correlates, and gender. *Journal of Family Issues*, 27 (5), 587-608.

Chipchase, J. (2005). *Understanding Non-Literacy as a Barrier to Mobile Phone Communication*. Retrieved June 2, 2006, from <http://research.nokia.com/bluesky/non-literacy-001-2005/index.html>

Chipchase, J., Persson, P., Aarras, M., Piippo, P., & Yamamoto, T. (2005). Mobile essentials: Field study and concepting. In *Proceedings of DUX 2005 Conference on Designing for User eXperience*. Retrieved May 1, 2006, from http://www.janchipchase.com/blog/archives/Chipchase_mefsac_SKETCH.pdf

Chu, G. C. (1990). Survey research in developing countries in Asia: Some personal experiences from 25 years of research. In U. Narula & W. B. Pearce (Eds.), *Culture, Politics, and Research Program: An International Assessment of Practical Problems* (pp. 151-160). Hillsdale, NJ: Lawrence Erlbaum Associates.

Clark, A. (2003). *Natural-Born Cyborgs: Minds, Technologies, and the Future of Human Intelligence*. Oxford, UK: Oxford University Press.

Cooper, A., & Sportolari, L. (1997). Romance in cyberspace: Understanding online attraction. *Journal of Sex Education & Therapy*, 22 (1), 7-14.

Cooper, G. (2001). The mutable mobile: Social theory in the wireless world. In B. Brown, N. Green, & R. Harper (eds.), *Wireless World: Social and Interactional Aspects of the Mobile Age* (pp. 19-31). London: Springer.

Correll, S. (1995). The ethnography of an electronic bar: The Lesbian Cafe. *Journal of Contemporary Ethnography*, 24 (3), 270-298.

de Gournay, C. (2002). Pretense of intimacy in France. In J. E. Katz & M. A. Aakhus (Eds.), *Perpetual Contact: Mobile Communication, Private Talk, Public Performance* (pp. 192-205). Cambridge: Cambridge University Press.

Dennis, A. R., Kinney, S. T., & Hung, Y.-T. C. (1999). Gender differences in the effects of media richness. *Small Group Research*, 30 (4), 405-437.

Dibbell, J. (1999). *My Tiny Life: Crime and Passion in a Virtual World*. New York: Henry Holt and Company.

Dickey, S. (2000). Permeable homes: Domestic service, household space, and the vulnerability of class boundaries in urban India. *American Ethnologist*, 27 (2), 462-489.

Dietmar, C. (2005). Mobile communication in couple relationships. In K. Nyíri (Ed.), *A Sense of Place: The Global and the Local in Mobile Communication: Places, Images, People, Connections* (pp. 201-208). Vienna: Passagen Verlag.

Dietrich, D. (1997). (Re)-fashioning the techno-erotic woman: Gender and textuality in the cybercultural matrix. In S. G. Jones (Ed.), *Virtual Culture: Identity and Communication in Cybersociety* (pp. 169-184). London: Sage Publications.

DiMaggio, P., Hargittai, E., Neuman, W. R., & Robinson, J. P. (2001). Social implications of the internet. *Annual Review of Sociology*, 27, 307-336. Retrieved September 18, 2002, from <http://soc.annualreviews.org/cgi/reprint/27/1/307>

Donner, J. (2004). Microentrepreneurs and mobiles: An exploration of the uses of mobile phones by small business owners in Rwanda. *Information Technologies and International Development*, 2 (1), 1-21. Retrieved March 14, 2007, from <http://www.mitpressjournals.org/doi/abs/10.1162/1544752043971198>

Donner, J. (2005a). The mobile behaviors of Kigali's microentrepreneurs: Whom they call...and why. In K. Nyíri (Ed.), *A Sense of Place: The Global and the Local in Mobile Communication: Places, Images, People, Connections* (pp. 293-304). Vienna: Passagen Verlag.

Donner, J. (2005b). Research approaches to mobile use in the developing world: A review of the literature. Presented at *International Conference on Mobile Communication and Asian Modernities*, Hong Kong, June 7-8, 2005. Retrieved May 15, 2006, from <http://www.jonathandonner.com/donner-mobrev.pdf>

Donner, J. (2005c). The rules of beeping: Exchanging messages using the 'missed call' function on mobile phones in sub-Saharan Africa. Presented at *55th Annual Conference of the International Communication Association*, New York, May 26-30, 2005. Retrieved July 5, 2006, from <http://www.jonathandonner.com/donner-beeping.pdf>

Driver, E. D., & Driver, A. E. (1988). Social and demographic correlates of

consanguineous marriages in South India. *Journal of Comparative Family Studies*, 19 (2), 229-244.

Durham, M. (2003). Language choice on a Swiss mailing list. *Journal of Computer-Mediated Communication*, 9 (1). Retrieved March 14, 2007, from <http://jcmc.indiana.edu/vol9/issue1/durham.html>

Dyer, R. (1999). Making 'white' people white. In D. MacKenzie & J. Wajcman (Eds.), *The Social Shaping of Technology* (2nd ed., pp. 134-137). Buckingham and Philadelphia: Open University Press.

Economist Intelligence Unit. (2006). *Country Profile Uzbekistan 2006*. Retrieved November 22, 2006, from http://portal.eiu.com/index.asp?layout=displayIssueTOC&issue_id=530349838&publication_id=1060000706

Education, history of. (2006). In *Encyclopedia Britannica*. Retrieved September 29, 2006, from Encyclopedia Britannica Online

Ellison, N., Heino, R., & Gibbs, J. (2006). Managing impressions online: Self-presentation processes in the online dating environment. *Journal of Computer Mediated Communication*, 11 (2). Retrieved December 8, 2006, from <http://jcmc.indiana.edu/vol11/issue2/ellison.html>

Ellwood-Clayton, B. (2003). Virtual strangers: Young love and texting in the Filipino archipelago of cyberspace. In K. Nyíri (Ed.), *Mobile Democracy: Essays on Society, Self and Politics* (pp. 225-235). Vienna: Passagen Verlag.

Ellwood-Clayton, B. (2005a). Desire and loathing in the cyber Philippines. In R. Harper, L. Palen, & A. Taylor (Eds.), *The Inside Text: Social Perspectives on SMS in the Mobile Age* (pp. 195-219). London: Springer-Verlag.

Ellwood-Clayton, B. (2005b). Texting and God: The Lord is my textmate: Folk Catholicism in the cyber Philippines. In K. Nyíri (Ed.), *A Sense of Place: The Global and the Local in Mobile Communication: Places, Images, People, Connections* (pp. 251-265). Vienna: Passagen Verlag.

Ellwood-Clayton, B. (2006a). All we need is love—and a mobile phone: Texting in

the Philippines. In *Proceedings of Cultural Space and Public Sphere in Asia 2006*.

Retrieved November 20, 2006, from http://asiafuture.org/csps2006/50pdf/csps2006_6c.pdf

Ellwood-Clayton, B. (2006b). Unfaithful: Enchantment and disenchantment through mobile use. In J. R. Höflich & M. Hartmann (Eds.), *An Ethnographic View on Mobile Communication*. Berlin: Frank & Timme.

Emerson, R. M., Fretz, R. I., & Shaw, L. L. (1995). *Writing Ethnographic Fieldnotes*. Chicago & London: University of Chicago Press.

The envoy who said too much. (2004, July 15). *The Guardian*. Retrieved January 3, 2007, from <http://www.guardian.co.uk/g2/story/0,3604,1261480,00.html>

Featherstone, M. (1996). Localism, globalism and cultural identity. In R. Wilson & W. Dissanayake (Eds.), *Global/Local: Cultural Production and the Transnational Imaginary* (pp. 46-77). Durham, NC: Duke University Press.

Ferghana.ru. (2005a, January 13). *Internet users in Uzbekistan number 675,000*. Retrieved January 15, 2005, from <http://enews.ferghana.ru/detail.php?id=757>

Ferghana.ru. (2005b, May 11). *Uznet festival began with publication of the list of UZ domens*. Retrieved May 11, 2005, from <http://enews.ferghana.ru/detail.php?id=931>

Fernandes, L. (2000). Restructuring the new middle class in liberalizing India. *Comparative Studies of South Asia, Africa and the Middle East*, 20 (1-2), 89-112.

Fiore, A. T., & Donath, J. S. (2005). Homophily in online dating: When do you like someone like yourself? In *Extended Abstracts of CHI 2005 Conference on Human Factors and Computing Systems* (pp. 1371-1374). New York: ACM Press. Retrieved November 27, 2006, from <http://doi.acm.org/10.1145/1056808.1056919>

Fischer, C. S. (1992). *America Calling: A Social History of the Telephone to 1940*. Berkeley: University of California Press.

Foner, L. N. (1997). Yenta: A multi-agent, referral-based matchmaking system. In

Proceedings of the First International Conference on Autonomous Agents (pp. 301-307). New York: ACM Press. Retrieved December 1, 2006, from <http://doi.acm.org/10.1145/267658.267732>

Fretland, K. (2006, August 7). U.K. store worker fired by text message. *USA Today*. Retrieved October 1, 2006, from http://www.usatoday.com/tech/news/2006-08-07-text-message-fired_x.htm

Fung, A. Y. H. (2002). Identity politics, resistance and new media technologies. *New Media and Society*, 4 (2), 185-204.

Gabilondo, J. (1995). Postcolonial cyborgs: Subjectivity in the age of cybernetic reproduction. In C. H. Gray, H. J. Figueroa-Sarriera, & S. Mentor (Ed.), *The Cyborg Handbook* (pp. 423-32). London and New York: Routledge.

Gant, D., & Kiesler, S. (2001). Blurring the boundaries: Cell phones, mobility, and the line between work and personal life. In B. Brown, N. Green, & R. Harper (eds.), *Wireless World: Social and Interactional Aspects of the Mobile Age* (pp. 121-132). London: Springer.

García-Montes, J. M., Caballero-Muñoz, D., & Pérez-Álvarez, M. (2006). Changes in the self resulting from the use of mobile phones. *Media, Culture & Society*, 28 (1), 67-82. Retrieved November 22, 2006, from <http://mcs.sagepub.com/cgi/reprint/28/1/67.pdf>

Gergen, K. J. (2002). The challenge of absent presence. In J. E. Katz & M. A. Aakhus (Eds.), *Perpetual Contact: Mobile Communication, Private Talk, Public Performance* (pp. 227-241). Cambridge: Cambridge University Press.

Ghimire, D. J., Axinn, W. G., Yabiku, S. T., & Thornton, A. (2006). Social Change, Premarital Nonfamily Experience, and Spouse Choice in an Arranged Marriage Society. *American Journal of Sociology*, 111 (4), 1181-1218.

Gibbs, J. L., Ellison, N. B., & Heino, R. D. (2006). Self-presentation in online personals: The role of anticipated future interaction, self-disclosure, and perceived success in Internet dating. *Communication Research*, 33 (2), 152-177.

Goodwin, R. (1999). *Personal Relationships Across Cultures*. London and New York: Routledge.

Goodwin, R., & Cramer, D. (eds.). (2002). *Inappropriate Relationships: The Unconventional, the Disapproved, and the Forbidden*. Mahwah, NJ: Lawrence Erlbaum Associates, Publishers.

Grinter, R. E., Edwards, W. K., Newman, M. W., & Ducheneaut, N. (2005). The work to make a home network work. In *Proceedings of the 9th European Conference on Computer-Supported Cooperative Work (ECSCW'05)* (pp. 469-488). Retrieved March 14, 2007, from <http://www-static.cc.gatech.edu/~beki/c27.pdf>

Grinter, R. E., & Eldridge, M. (2003). Wan2tlk?: Everyday text messaging. *Proceedings of CHI 2003 Conference on Human Factors in Computing Systems* (pp. 441-48). New York: ACM Press. Retrieved December 20, 2003, from <http://doi.acm.org/10.1145/642611.642688>

Grinter, R. E., & Eldridge, M. A. (2001). y do tngers luv 2 txt msg? In *Proceedings of the 7th European Conference on Computer-Supported Cooperative Work (ECSCW'01)* (pp. 219-38). Dordrecht, Netherlands: Kluwer Academic Publishers.

Grinter, R. E., & Palen, L. (2002). Instant messaging in teen life. In *Proceedings of CSCW 2002 Conference on Computer Supported Cooperative Work* (pp. 21-30). New York: ACM Press. Retrieved December 7, 2006, from <http://doi.acm.org/10.1145/587078.587082>

Groom, C. J., & Pennebaker, J. W. (2005). The language of love: Sex, sexual orientation, and language use in online personal advertisements. *Sex Roles*, 52 (7-8), 447-461.

Grossman, A. J. (2006, November 30). Here's my number (for today). *New York Times*. Retrieved November 30, 2006, from <http://www.nytimes.com/2006/11/30/fashion/30numbers.html>

Gudelunas, D. (2005). Online personal ads: Community and sex, virtually. *Journal of Homosexuality*, 49 (1), 1-33.

- Guha, R. (1988). On some aspects of the historiography of colonial India. In R. Guha & G. C. Spivak (Eds.), *Selected Subaltern Studies* (pp. 37-44). New York: Oxford University Press.
- Haarmann, H. (2001). Small languages in the information age: Strategies of survival. *Sociolinguistica*, 16, 32-39.
- Haddon, L. (2003). Domestication and mobile telephony. In J. E. Katz (Ed.), *Machines that Become Us: The Social Context of Personal Communication Technology* (pp. 43-55). New Brunswick, NJ: Transaction Publishers.
- Haddon, L., & Vincent, J. (2005). Making the most of the communications repertoire: Choosing between the mobile and fixed-line. In K. Nyíri (Ed.), *A Sense of Place: The Global and the Local in Mobile Communication* (pp. 231-240). Vienna: Passagen Verlag.
- Hall, S. (1997). The local and the global: Globalization and ethnicity. In A. D. King (Ed.), *Culture, Globalization, and the World-System: Contemporary Conditions for the Representation of Identity* (pp. 19-39). Minneapolis: University of Minnesota Press.
- Haraway, D. (1991). A cyborg manifesto: Science, technology, and socialist-feminism in the late twentieth century. In D. Haraway, *Simians, Cyborgs and Women: The Reinvention of Nature* (pp. 149-181). New York: Routledge.
- Hardey, M. (2002). Life beyond the screen: Embodiment and identity through the internet. *The Sociological Review*, 50 (4), 570-585.
- Hardey, M. (2004). Mediated relationships: Authenticity and the possibility of romance. *Information, Communication & Society*, 7 (2), 207-222.
- Harkness, J., Van de Vijver, F. J. R., & Johnson, T. (2003). Questionnaire design in comparative research. In J. Harkness, F. J. R. Van de Vijver, & P. P. Mohler (eds.), *Cross-Cultural Survey Methods* (pp. 19-34). Hoboken, NJ: John Wiley & Sons.
- Hayles, N. K. (1999). *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics*. Chicago and London: The University of Chicago Press.

Haythornthwaite, C. (2001). Introduction: The internet in everyday life. *American Behavioral Scientist*, 45 (3), 363-382.

Haythornthwaite, C., Wellman, B., & Garton, L. (1998). Work and community via computer-mediated communication. In J. Gackenbach (Ed.), *Psychology and the Internet: Intrapersonal, Interpersonal, and Transpersonal Implications* (pp. 199-226). San Diego, CA: Academic Press.

Henderson, S., & Gilding, M. (2004). 'I've never clicked this much with anyone in my life': Trust and hyperpersonal communication in online friendships. *New Media & Society*, 6 (4), 487-506.

Henderson, S., Taylor, R., & Thomson, R. (2002). In touch: Young people, communication and technologies. *Information, Communication & Society*, 5 (4), 494-512.

Herbsleb, J. D., Atkins, D. L., Boyer, D. G., Handel, M., & Finholt, T. A. (2002). Introducing instant messaging and chat in the workplace. *Proceedings of CHI 2002 Conference on Human Factors in Computing Systems* (pp. 171-78). New York, NY: ACM Press. Retrieved June 1, 2004, from <http://doi.acm.org/10.1145/503376.503408>

Hirsch, T., & Henry, J. (2005). TXTmob: Text messaging for protest swarms. *Extended Abstracts of CHI 2005 Conference on Human Factors and Computing Systems* (pp. 1455-1458). New York: ACM Press. Retrieved December 1, 2006, from <http://doi.acm.org/10.1145/1056808.1056940>

Hjorth, L. (2003). Pop and *ma*: The landscape of Japanese commodity. In C. Berry, F. Martin, & A. Yue (Eds.), *Mobile Cultures: New Media in Queer Asia* (pp. 158-179). Durham and London: Duke University Press.

Horst, H. A. (2006). The blessings and burdens of communication: Cell phones in Jamaican transnational social fields. *Global Networks*, 6 (2), 143-159.

Horst, H., & Miller, D. (2005). From kinship to link-up: Cell phones and social networking in Jamaica. *Current Anthropology*, 46 (5), 755-778.

Hu, Y., Wood, J. F., Smith, V., & Westbrook, N. (2004). Friendships through IM:

- Examining the relationship between instant messaging and intimacy. *Journal of Computer-Mediated Communication*, 10 (1). Retrieved December 7, 2006, from <http://jcmc.indiana.edu/vol10/issue1/lu.html>
- Human Rights Watch. (2002, May 7). *Profile of President Islam Karimov*. Retrieved January 3, 2007, from <http://www.hrw.org/press/2002/03/karimovprof.htm>
- Humphreys, L. (2005). Cellphones in public: Social interactions in a wireless era. *New Media and Society*, 7 (6), 810-833.
- Hunter, A., & Brewer, J. (2003). Multimethod research in sociology. In A. Tashakkori & C. Teddlie (Eds.), *Handbook of Mixed Methods in Social and Behavioral Research* (pp. 577-594). Thousand Oaks, CA: Sage Publications.
- Ichikawa, F., Chipchase, J., & Grignani, R. (2005). Where's the phone? A study of mobile phone location in public spaces. In *Proceedings of Mobility 2005 Conference on Mobile Technology, Applications, and Systems*. Retrieved May 1, 2006, from http://www.janchipchase.com/blog/archives/WheresThePhone_MilanNYHelsinki.pdf
- Igarashi, T., Takai, J., & Yoshida, T. (2005). Gender differences in social network development via mobile phone text messages: A longitudinal study. *Journal of Social and Personal Relationships*, 22 (5), 691-713.
- International Telecommunication Union. (2007). *ICT Statistics Database*. Retrieved February 7, 2007, from <http://www.itu.int/ITU-D/icteye/Indicators/Indicators.aspx>
- Isaacs, E., Walendowski, A., Whittaker, S., Schiano, D. J., & Kamm, C. (2002). The character, functions, and styles of instant messaging in the workplace. In *Proceedings of CSCW 2002 Conference on Computer Supported Cooperative Work* (pp. 11-20). New York: ACM Press. Retrieved December 7, 2006, from <http://doi.acm.org/10.1145/587078.587081>
- Ito, M., & Okabe, D. (2003). Mobile phones, Japanese youth, and the re-placement of social contact. In *Front Stage - Back Stage: Mobile Communication and the Renegotiation of the Social Sphere*. Retrieved December 20, 2003, from <http://www.itofisher.com/PEOPLE/mito/mobileyouth.pdf>

Ito, M., & Okabe, D. (2004). Intimate connections: Contextualizing Japanese youth and mobile messaging. In R. Harper, L. Palen, & A. Taylor (Eds.), *The Inside Text: Social Perspectives on SMS in the Mobile Age* (pp. 127-145). London: Springer-Verlag.

Jamieson, D. (2002, September 30). Mobiles to leapfrog into the future. *BBC News Online*. Retrieved December 20, 2003, from <http://news.bbc.co.uk/1/hi/technology/2287913.stm>

Johnsen, T. E. (2003). The social context of the mobile phone use of Norwegian teens. In J. E. Katz (Ed.), *Machines That Become Us: The Social Context of Personal Communication Technology* (pp. 161-69). New Brunswick, NJ: Transaction Publishers.

Johnson, T. P., & Van de Vijver, F. J. R. (2003). Social desirability in cross-cultural research. In J. Harkness, F. J. R. Van de Vijver, & P. P. Mohler (eds.), *Cross-Cultural Survey Methods* (pp. 295-304). Hoboken, NJ: John Wiley & Sons.

Jones, S. (2006). Reality© and virtual reality©: When virtual and real worlds collide. *Cultural Studies*, 20 (2-3), 211-226.

Jones, S. G. (1995). Understanding community in the information age. In S. G. Jones (Ed.), *CyberSociety: Computer-Mediated Communication and Community* (pp. 10-35). Thousand Oaks, CA: Sage Publications.

Kamibeppu, K., & Sugiura, H. (2005). Impact of the mobile phone on junior high-school students' friendships in the Tokyo metropolitan area. *CyberPsychology & Behavior*, 8 (2), 121-130.

Kamvar, M., & Baluja, S. (2006). A large scale study of wireless search behavior: Google mobile search. In *Proceedings of CHI 2006 Conference on Human Factors and Computer Systems* (pp. 701-709). New York: ACM Press. Retrieved October 1, 2006, from <http://doi.acm.org/10.1145/1124772.1124877>

Kandiyoti, D. (1998). Rural livelihoods and social networks in Uzbekistan: Perspectives from Andijan. *Central Asian Survey*, 17 (4), 561-578.

- Kapadia, K. (1993). Marrying money: Changing preference and practice in Tamil marriage. *Contributions to Indian Sociology*, 27 (1), 25-51.
- Kasesniemi, E.-L., & Rautiainen, P. (2002). Mobile culture of children and teenagers in Finland. In J. E. Katz & M. Aakhus (Eds.), *Perpetual Contact: Mobile Communication, Private Talk, and Public Performance* (pp. 170-92). Cambridge: Cambridge University Press.
- Katz, J. E., & Aakhus, M. A. (2002). Conclusion: Making meaning of mobiles—a theory of Apparategeist. In J. E. Katz & M. A. Aakhus (Eds.), *Perpetual Contact: Mobile Communication, Private Talk, Public Performance* (pp. 301-318). Cambridge: Cambridge University Press.
- Katz, J. E., & Sugiyama, S. (2006). Mobile phones as fashion statements: Evidence from student surveys in the US and Japan. *New Media & Society*, 8 (2), 321-337.
- Kayan, S., Fussell, S. R., & Setlock, L. D. (2006). Cultural differences in the use of instant messaging in Asia and North America. In *Proceedings of CSCW 2006 Conference on Computer Supported Cooperative Work* (pp. 525-528). New York: ACM Press. Retrieved December 7, 2006, from <http://doi.acm.org/10.1145/1180875.1180956>
- Keating, E., & Mirus, G. (2003). American Sign Language in virtual space: Interactions between deaf users of computer-mediated video communication and the impact of technology on language practices. *Language in Society*, 32 (5), 693-714.
- Keller, M. (2005). Freedom calling: Telephony, mobility and consumption in post-socialist Estonia. *European Journal of Cultural Studies*, 8 (2), 217-238.
- Kiesler, S., Siegel, J., & McGuire, T. W. (1984). Social psychological aspects of computer-mediated communication. *American Psychologist*, 39 (10), 1123-1134.
- Kolko, B., & Reid, E. (1998). Dissolution and fragmentation: Problems in on-line communities. In S. G. Jones (Ed.), *CyberSociety 2.0: Revisiting Computer-Mediated Communication and Community* (pp. 212-230). Thousand Oaks, CA: Sage Publications.

- Kolko, B. E. (2002). International IT implementation projects: Policy and cultural considerations. In *Proceedings of the 2002 International Professional Communication Conference* (pp. 352-359). Piscataway, NJ: IEEE.
- Kolko, B. E., Wei, C. Y., & Spyridakis, J. H. (2003). Internet use in Uzbekistan: Developing a methodology for tracking IT implementation success. *Information Technologies and International Development*, 1 (2), 1-19.
- Konkka, K. (2003). Indian needs: Cultural end-user research in Mumbai. In C. Lindholm, T. Keinonen, & H. Kiljander (Eds.), *Mobile Usability: How Nokia Changed the Face of the Mobile Phone* (pp. 97-112). New York: McGraw-Hill.
- Koutsogiannis, D., & Mitsikopoulou, B. (2003). Greeklis and Greekness: Trends and discourses of 'Glocalness'. *Journal of Computer-Mediated Communication*, 9 (1). Retrieved March 14, 2007, from http://jcmc.indiana.edu/vol9/issue1/kouts_mits.html
- Kraidy, M. M. (2005). *Hybridity, or the Cultural Logic of Globalization*. Philadelphia, PA: Temple Press.
- Kramarae, C. (1999). The language and nature of the Internet: The meaning of global. *New Media and Society*, 1 (1), 47-53.
- Kusenbach, M. (2003). Street phenomenology: The go-along as ethnographic research tool. *Ethnography*, 4 (3), 455-85.
- Landau, J. M., & Kellner-Heinkele, B. (2001). *Politics of Language in the Ex-Soviet Muslim States: Azerbaijan, Uzbekistan, Kazakhstan, Kyrgyzstan, Turkmenistan, Tajikistan*. London: Hurst and Company.
- Lawson, H. M., & Leck, K. (2006). Dynamics of internet dating. *Social Science Computer Review*, 24 (2), 189-208.
- Lemish, D., & Cohen, A. A. (2005). On the gendered nature of mobile phone culture in Israel. *Sex Roles: A Journal of Research*, 52 (7-8), 511-521.
- Lessig, L. (1999). *Code and Other Laws of Cyberspace*. New York: Basic Books.

- Leung, L., & Wei, R. (2000). More than just talk on the move: A use-and-gratification study of the cellular phone. *Journalism & Mass Communication Quarterly*, 77 (2), 308-320.
- Licoppe, C. (2004). 'Connected' presence: The emergence of a new repertoire for managing social relationships in a changing communication technoscape. *Environment and Planning D: Society and Space*, 22 (1), 135-156. Retrieved November 28, 2006, from <http://www.envplan.com/epd/fulltext/d22/d323t.pdf>
- Lin, A. (2005). Gendered, bilingual communication practices: Mobile text-messaging among Hong Kong college students. *Fibreculture*, 6. Retrieved November 22, 2006, from http://journal.fibreculture.org/issue6/issue6_lin.html
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic Inquiry*. Beverly Hills, CA: Sage Publications.
- Ling, R. (2003). Fashion and vulgarity in the adoption of the mobile telephone among teens in Norway. In L. Fortunati, J. E. Katz, & R. Riccini (Eds.), *Mediating the Human Body: Technology, Communication, and Fashion* (pp. 93-102). Mahwah, NJ: Lawrence Erlbaum Associates.
- Ling, R., & Yttri, B. (2002). Hyper-coordination via mobile phones in Norway. In J. E. Katz & M. A. Aakhus (Eds.), *Perpetual Contact: Mobile Communication, Private Talk, and Public Performance* (pp. 139-69). Cambridge: Cambridge University Press.
- Lobet-Maris, C. (2003). Mobile phone tribes: Youth and social identity. In L. Fortunati, J. E. Katz, & R. Riccini (Eds.), *Mediating the Human Body: Technology, Communication, and Fashion* (pp. 87-92). Mahwah, NJ: Lawrence Erlbaum Associates.
- Lockard, J. (2000). Babel machines and electronic universalism. In B. E. Kolko, L. Nakamura, & G. B. Rodman (Eds.), *Race in Cyberspace* (pp. 191-212). New York: Routledge.
- Loyalka, M. D. (2006). Meet the small-biz-friendly China. *BusinessWeek*. Retrieved November 22, 2006, from http://www.businessweek.com/smallbiz/content/jan2006/sb20060101_281430.htm/

Ludden, D. (2002). Introduction: A brief history of subalternity. In D. Ludden (Ed.), *Reading Subaltern Studies: Critical History, Contested Meaning and the Globalization of South Asia* (pp. 1-42). London: Anthem Press.

Luo, M. (2006, May 21). Immigrants hear God's Word, in Chinese, via conference call. *New York Times*. Retrieved May 24, 2006, from <http://www.nytimes.com/2006/05/21/nyregion/21bible.html>

Lycett, J. E., & Dunbar, R. I. M. (2000). Mobile phones as lekking devices among human males. *Human Nature*, 11 (1), 93-104.

MacKenzie, D., & Wajcman, J. (1999). Introductory essay: The social shaping of technology. In D. MacKenzie & J. Wajcman (Eds.), *The Social Shaping of Technology* (2nd ed., pp. 3-27). Buckingham and Philadelphia: Open University Press.

May, H., & Hearn, G. (2005). The mobile phone as media. *International Journal of Cultural Studies*, 8 (2), 195-211.

Medora, N. P. (2003). Mate selection in contemporary India: Love marriages versus arranged marriages. In R. R. Hamon & B. B. Ingoldsby (Eds.), *Mate Selection Across Cultures* (pp. 209-230). Thousand Oaks, CA: Sage Publications.

Men use phones to flirt. (2006, November 14). Retrieved November 30, 2006, from <http://www.cellular-news.com/story/20410.php>

Merkle, E. R., & Richardson, R. A. (2000). Digital dating and virtual relating: Conceptualizing computer mediated romantic relationships. *Family Relations*, 49 (2), 187-192.

Mesch, G. S. (2006). Family relations and the Internet: Exploring a family boundaries approach. *Journal of Family Communication*, 6 (2), 119-138.

Miller, D., & Horst, H. (2005a). 'Cell phone come like a blessing': Religion and the cell phone in a rural Jamaican town. *Jamaica Journal*, 29 (1-2), 12-17.

Miller, D. & Horst, H. (2005b). Understanding demand: A proposal for the

development of ICTs in Jamaica. *Information Society Research Group Working Paper No. 2*. London: Information Society Research Group. Retrieved November 27, 2006, from <http://www.isrg.info/ISRGWorkingPaper2.pdf>

Miller, D., & Slater, D. (2000). *The Internet: An Ethnographic Approach*. Oxford: Berg.

Mitra, A. (1997). Virtual commonality: Looking for India on the internet. In S. G. Jones (Ed.), *Virtual Culture: Identity and Communication in Cybersociety* (pp. 55-79). London: Sage Publications.

Miyoshi, M. (1996). A borderless world? From colonialism to transnationalism and the decline of the nation-state. In R. Wilson & W. Dissanayake (Eds.), *Global/Local: Cultural Production and the Transnational Imaginary* (pp. 78-106). Durham, NC: Duke University Press.

Mobile divorce unacceptable, says Malaysia. (2001, July 12). *BBC News Online*. Retrieved October 1, 2006, from <http://news.bbc.co.uk/1/hi/world/asia-pacific/1435647.stm>

Mohanadoss, T. (1995). Hypergamy and its inherent contradictions. *ANTHROPOS*, 90 (4-6), 558-563.

Monk, A., Carroll, J., Parker, S., & Blythe, M. (2004). Why are mobile phones annoying? *Behaviour & Information Technology*, 23 (1), 33-41. Retrieved February 1, 2004, from Ingenta Select

Monk, A., Fellas, E., & Ley, E. (2004). Hearing only one side of normal and mobile phone conversations. *Behaviour and Information Technology*, 23 (5), 301-305.

Montgomery, A. J., Panagopoulou, E. P., Peeters, M. C. W., & Schaufeli, W. B. (2005). The meaning of work and home. *Community, Work & Family*, 8 (2), 141-161.

Mullatti, L. (1995). Families in India: Beliefs and realities. *Journal of Comparative Family Studies*, 26 (1), 11-25.

- Murtagh, G. M. (2001). Seeing the 'rules': Preliminary observations of action, interaction and mobile phone use. In B. Brown, N. Green, & R. Harper (Eds.), *Wireless World: Social and Interactional Aspects of the Mobile Age* (pp. 81-91). London: Springer-Verlag.
- Nafus, D., & Tracey, K. (2002). Mobile phone consumption and concepts of personhood. In J. E. Katz & M. A. Aakhus (Eds.), *Perpetual Contact: Mobile Communication, Private Talk, Public Performance* (pp. 206-221). Cambridge: Cambridge University Press.
- Nakamura, L. (2002). 'Where do you want to go today?' Cybernetic tourism, the internet, and transnationality. In L. Nakamura, *Cybertypes: Race, Ethnicity, and Identity on the Internet* (pp. 87-100). New York: Routledge.
- Nardi, B. A., Whittaker, S., & Bradner, E. (2000). Interaction and outeraction: instant messaging in action. In *Proceedings of CSCW 2000 Conference on Computer Supported Cooperative Work* (pp. 79-88). New York: ACM Press. Retrieved December 7, 2006, from <http://doi.acm.org/10.1145/358916.358975>
- Narula, U. (1990). Practical constraints in social field research in India. In U. Narula & W. B. Pearce (Eds.), *Culture, Politics, and Research Program: An International Assessment of Practical Problems* (pp. 123-150). Hillsdale, NJ: Lawrence Erlbaum Associates.
- NationMaster. (2006). *Encyclopedia: Tashkent*. Retrieved January 26, 2007, from <http://www.nationmaster.com/encyclopedia/Tashkent>
- Nippert-Eng, C. E. (1996). *Home and Work: Negotiating Boundaries Through Everyday Life*. Chicago and London: University of Chicago Press.
- Noguchi, Y. (2005, December 29). Life and romance in 160 characters or less. *The Washington Post*. Retrieved October 1, 2006, from <http://www.washingtonpost.com/wp-dyn/content/article/2005/12/28/AR2005122801430.html>
- Oksman, V., & Rautiainen, P. (2003). 'Perhaps it is a body part': How the mobile phone became an organic part of the everyday lives of Finnish children and teenagers. In J. E. Katz (Ed.), *Machines That Become Us: The Social Context of Personal Communication Technology* (pp. 293-308). New Brunswick, NJ: Transaction

Publishers.

- Oksman, V., & Turtiainen, J. (2004). Mobile communication as a social stage: Meanings of mobile communication in everyday life among teenagers in Finland. *New Media & Society*, 6 (3), 319-339.
- Özcan, Y. Z., & Koçak, A. (2003). Research note: A need or a status symbol? Use of cellular telephones in Turkey. *European Journal of Communication*, 18 (2), 241-254.
- Palen, L., Salzman, M., & Youngs, E. (2001). Discovery and integration of mobile communications in everyday life. *Personal and Ubiquitous Computing*, 5 (2), 109-22. Retrieved December 20, 2003, from <http://dx.doi.org/10.1007/s007790170014>
- Parks, M. R., & Floyd, K. (1996). Making friends in cyberspace. *Journal of Computer-Mediated Communication*, 1 (4). Retrieved November 27, 2006, from <http://jcmc.indiana.edu/vol1/issue4/parks.html>
- Pearce, W. B., & Narula, U. (1990). 'Practical problems' and research methods. In U. Narula & W. B. Pearce (eds.), *Culture, Politics, and Research Program: An International Assessment of Practical Problems* (pp. 1-18). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Persson, A. (2001). Intimacy among strangers: On mobile telephone calls in public places. *Journal of Mundane Behavior*, 2 (3). Retrieved November 27, 2006, from <http://www.mundanebehavior.org/issues/v2n3/persson.htm>
- Pertierra, R. (2005). Mobile phones, identity and discursive intimacy. *Human Technology*, 1 (1), 23-44. Retrieved November 20, 2006, from <http://www.humantechnology.jyu.fi/articles/volume1/2005/pertierra.pdf>
- Pertierra, R., Ugarte, E. F., Pingol, A., Hernandez, J., & Dacanay, N. L. (Eds.). (2002). *Txt-Ing Selves: Cellphones and Philippine Modernity*. Manila: De La Salle University Press.
- Piecowye, J., & Badran, B. (2004). Culture, communication, media and hybridism: The Dubai case. In *Proceedings of the 4th Conference on Cultural Attitudes Toward Technology and Communication (CATaC '04)* (pp. 399-410). Murdoch, Australia:

Murdoch University.

Plant, S. (2001). *On the Mobile: The Effects of Mobile Telephones on Social and Individual Life*. Libertyville, IL. Retrieved November 22, 2006, from http://www.motorola.com/mot/doc/0/234_MotDoc.pdf

Pool, I. d. S. (Ed.). (1977). *The Social Impact of the Telephone*. Cambridge, MA: MIT Press.

Power, M. R., & Power, D. (2004). Everyone here speaks TXT: Deaf people using SMS in Australia and the rest of the world. *Journal of Deaf Studies and Deaf Education*, 9 (3), 333-343.

Prøitz, L. (2005a). Cute boys or game boys? The embodiment of femininity and masculinity in young Norwegians' text message love-projects. *Fibreculture*, 6. Retrieved November 22, 2006, from http://journal.fibreculture.org/issue6/issue6_proitz.html

Prøitz, L. (2005b). Intimacy fiction: Intimacy discourses in mobile telephone communication amongst Norwegian youth. In K. Nyiri (Ed.), *A Sense of Place: The Global and the Local in Mobile Communication: Places, Images, People, Connections* (pp. 191-200). Vienna: Passagen Verlag.

Rafael, V. L. (2003). The cell phone and the crowd: Messianic politics in the contemporary Philippines. *Public Culture*, 15 (3), 399-425.

Rainie, L. & Keeter, S. (2006). *How Americans Use Their Cell Phones*. Retrieved October 4, 2006, from http://www.pewinternet.org/PPF/r/179/report_display.asp

The real digital divide. (2005). *The Economist*. Retrieved November 22, 2006, from http://www.economist.com/printedition/displaystory.cfm?Story_ID=3742817

Rheingold, H. (1993). *The Virtual Community: Homesteading on the Electronic Frontier*. Reading, MA: Addison-Wesley.

Rheingold, H. (2002). *Smart Mobs: The Next Social Revolution*. Cambridge, MA:

Perseus Publishing.

Ribak, R. (2006). Cultural reflections on the mobile phone in parent-teen relationships. In *Proceedings of the 5th Conference on Cultural Attitudes Toward Technology and Communication (CATaC '06)*.

Ross, M. W. (2005). Typing, doing, and being: Sexuality and the internet. *Journal of Sex Research*, 42 (4), 342-352.

Roy, S. (2003). From Khush List to Gay Bombay: Virtual webs of real people. In C. Berry, F. Martin, & A. Yue (Eds.), *Mobile Cultures: New Media in Queer Asia* (pp. 180-200). Durham and London: Duke University Press.

Runnel, P., Pruulmann-Vengerfeldt, P., & Keller, M. (2006). A mobile phone isn't a mobile phone any more: Case study of Estonian mobile phone use practices. In *Proceedings of the 5th Conference on Cultural Attitudes Toward Technology and Communication (CATaC '06)* (pp. 606-621). Retrieved November 22, 2006, from <http://www.jml.ut.ee/~pille/PhD/5-VI-runnel-pruulmann-vengerfeldt-keller.pdf>

Sachdev, P. (1998). Sex on campus: A preliminary study of knowledge, attitudes and behaviour of university students in Delhi, India. *Journal of Biosocial Science*, 30 (1), 95-105.

Said, E. (1979). *Orientalism*. New York: Vintage Books.

Saidazimova, G. (2006, May 13). Uzbekistan: Rallies abroad mark Andijon anniversary. *Radio Free Europe/Radio Liberty*. Retrieved May 22, 2006, from <http://www.rferl.org/featuresarticle/2006/05/8E61BD80-BB73-4E7A-BD70-62EC9AA82D77.html>

Salazar, C. (2001). Building boundaries and negotiating work at home. In *Proceedings of Group 2001 Conference on Supporting Group Work* (pp. 162-170). New York: ACM Press. Retrieved December 18, 2006, from <http://doi.acm.org/10.1145/500286.500311>

Sandel, T. L. (2003). Linguistic capital in Taiwan: The KMT's Mandarin language policy and its perceived impact on language practices of bilingual Mandarin and Tai-

gi speakers. *Language in Society*, 32 (4), 523-51.

Sandoval, C. (1995). New sciences: Cyborg feminism and the methodology of the oppressed. In C. H. Gray, H. J. Figueroa-Sarriera, & S. Mentor (Ed.), *The Cyborg Handbook* (pp. 407-422). London, New York: Routledge.

Sarch, A. (1993). Making the connection: Single women's use of the telephone in dating relationships with men. *The Journal of Communication*, 43 (2), 128-144.

Schaap, F. (2002). *The Words That Took Us There: Ethnography in a Virtual Reality*. Amsterdam: Aksant Academic Publishers.

Schaeffer-Gabriel, F. (2006). Planet-Love.com: Cyberbrides in the Americas and the transnational routes of U.S. masculinity. *Signs*, 31 (2), 331-356.

Scharlott, B. W., & Christ, W. G. (1995). Overcoming relationship-initiation barriers: The impact of a computer-dating system on sex role, shyness, and appearance inhibitions. *Computers in Human Behavior*, 11 (2), 191-204.

Schlyter, B. N. (2003). Sociolinguistic changes in transformed Central Asian societies. In J. Maurais & M. A. Morris (Eds.), *Languages in a Globalising World* (pp. 157-87). Cambridge: Cambridge University Press.

Schmidt, H. (2004). 'Curiosities of (self)consciousness'. In *Proceedings of the 4th Conference on Cultural Attitudes Toward Technology and Communication (CATaC '04)* (pp. 411-415). Murdoch, Australia: Murdoch University.

Scott, D. W. (2002). Matchmaker, matchmaker, find me a mate: A cultural examination of a virtual community of single Mormons. *Journal of Media and Religion*, 1 (4), 201-216. Retrieved November 11, 2005, from Lawrence Erlbaum Associates, Inc.

Scott, N., Batchelor, S., Ridley, J., & Jorgensen, B. (2004). The impact of mobile phones in Africa. Retrieved November 22, 2006, from http://www.commissionforafrica.org/english/report/background/scott_et_al_background.pdf

- Setlock, L. D., Fussell, S. R., & Neuwirth, C. (2004). Taking it out of context: Collaborating within and across cultures in face-to-face settings and via instant messaging. In *Proceedings of CSCW 2004 Conference on Computer Supported Cooperative Work* (pp. 604-613). New York: ACM Press. Retrieved December 7, 2006, from <http://doi.acm.org/10.1145/1031607.1031712>
- Sheela, J., & Audinarayana, N. (2003). Mate selection and female age at marriage: A micro level investigation in Tamil Nadu, India. *Journal of Comparative Family Studies*, 34 (4), 497-508.
- Shome, R. (2006). Thinking through the diaspora: Call centers, India, and a new politics of hybridity. *International Journal of Cultural Studies*, 9 (1), 105-124.
- Sievers, E. W. (2002). Uzbekistan's mahalla: From Soviet to absolutist residential community associations. *The Journal of International and Comparative Law at Chicago-Kent*, 2, 91-158. Retrieved March 14, 2007, from <http://www.kentlaw.edu/jicl/articles/spring2002/JICL%20Sievers%20Mahalla%20final%20for%20publication.pdf>
- Siibak, A. (2006). Macho studs and flirty bimbos: Gender identity analysis of the most remarkable youngsters in Estonian dating website Rate.ee. In *The 9th Nordic Youth Research Information Symposium* Stockholm, Sweden: Södertörns högskola. Retrieved November 22, 2006, from [http://webappl.web.sh.se/C1256CD200369F7E/0/65A33B00578C03C9C12570E400437728/\\$file/Andra%20Siibak.doc](http://webappl.web.sh.se/C1256CD200369F7E/0/65A33B00578C03C9C12570E400437728/$file/Andra%20Siibak.doc)
- Singh, J. (1998). Marriage in transition. *Guru Nanak Journal of Sociology*, 19 (1), 25-66.
- Slater, D. & Kwami, J. (2005). Embeddedness and escape: Internet and mobile use as poverty reduction strategies in Ghana. *Information Society Research Group Working Paper No. 4*. London: Information Society Research Group. Retrieved November 27, 2006, from <http://www.isrg.info/ISRGWorkingPaper4.pdf>
- Smith, G., Law, V., Wilson, A., Bohr, A., & Allworth, E. (1998). *Nation-Building in the Post-Soviet Borderlands: The Politics of National Identities*. Cambridge: Cambridge University Press.
- Social class. (2006). In *Encyclopedia Britannica*. Retrieved October 2, 2006, from

Encyclopedia Britannica Online

Spradley, J. P. (1979). *The Ethnographic Interview*. New York: Holt, Rinehart, & Winston.

Sproull, L., & Kiesler, S. (1986). Reducing social context cues: Electronic mail in organizational communication. *Management Science*, 32, 1492-1512.

Spyridakis, J. H., Wei, C., & Kolko, B. E. (2003). The relationship of culture and information-seeking behaviour: A case study in Central Asia. In *Adjunct Proceedings of HCI International 2003* (pp. 167-168). Crete, Greece: Crete University Press.

Sridharan, E. (2004). The growth and sectoral composition of India's middle class: Its impact on the politics of economic liberalization. *India Review*, 3 (4), 405-428.

Srinivasan, P., & Lee, G. R. (2004). The dowry system in Northern India: Women's attitudes and social change. *Journal of Marriage and Family*, 66 (5), 1108-1117.

Srivastava, L. (2005). Mobile phones and the evolution of social behaviour. *Behaviour & Information Technology*, 24 (2), 111-129.

Stevens, D. (1998). The concept and importance of social capital: An aid to understanding Uzbekistan in to the 21st century. *Journal of Central Asian Studies*, 2 (2), 42-46.

Stone, A. R. (1995). *The War of Desire and Technology at the Close of the Mechanical Age*. Cambridge, MA, and London: The MIT Press.

Stratton, J. (1997). Cyberspace and the globalization of culture. In D. Porter (Ed.), *Internet Culture* (pp. 253-275). New York: Routledge.

Strauss, A. L., & Corbin, J. (1998). *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory* (2nd ed.). Thousand Oaks, CA: Sage Publications.

- Strom, G. (2002). The telephone comes to a Filipino village. In J. E. Katz & M. Aakhus (Eds.), *Perpetual Contact: Mobile Communication, Private Talk, Public Performance* (p. 274–283). Cambridge: Cambridge University Press.
- Su, H.-Y. (2003). The multilingual and multi-orthographic Taiwan-based Internet: Creative uses of writing systems on college-affiliated BBSs. *Journal of Computer-Mediated Communication*, 9 (1). Retrieved March 14, 2007, from <http://jcmc.indiana.edu/vol9/issue1/su.html>
- Taub, E. A. (2001, November 22). Cell yell: Thanks for (not) sharing. *New York Times*, p. G1.
- Taylor, A. S., & Harper, R. (2003). The gift of the gab?: A design oriented sociology of young people's use of mobiles. *Computer Supported Cooperative Work: The Journal of Collaborative Computing*, 12 (3), 267-96.
- Taylor, A. S., & Swan, L. (2004). Bridging the physical and the digital: List making in the home. In *Proceedings of CSCW 2004 Conference on Computer Supported Cooperative Work* (pp. 542-545). New York: ACM Press. Retrieved December 16, 2006, from <http://doi.acm.org/10.1145/1031607.1031697>
- Taylor, A. S., & Swan, L. (2005). Artful systems in the home. In *Proceedings of CHI 2005 Conference on Human Factors in Computing Systems* (pp. 641-650). New York: ACM Press. Retrieved December 16, 2006, from <http://doi.acm.org/10.1145/1054972.1055060>
- Taylor, P., & Bain, P. (2005). 'India calling to the far away towns': The call centre labour process and globalization. *Work, Employment & Society*, 19 (2), 261-282.
- Telegeography. (2004, October 15). *Perfectum Mobile inks CDMA 1x deal with ZTE: Looks for perfect start in crowded market*. Retrieved January 4, 2007, from http://www.telegeography.com/cu/article.php?article_id=4978
- Thou shalt not take SMS confession. (2003, March 3). *CNN.Com*. Retrieved October 1, 2006, from <http://www.cnn.com/2003/WORLD/asiapcf/southeast/03/03/offbeat.phil.sms/index.html>

- Thurlow, C. (2003). Generation Txt? The sociolinguistics of young people's text-messaging. *Discourse Analysis Online*, 1 (1). Retrieved November 27, 2006, from <http://extra.shu.ac.uk/daol/articles/v1/n1/a3/thurlow2002003.html>
- Turkle, S. (1995). *Life on the Screen: Identity in the Age of the Internet*. New York: Simon and Schuster.
- Uberoi, P. (1994). Marriage, alliance, and affinal transactions. In P. Uberoi (Ed.), *Family, Kinship and Marriage in India* (pp. 225-236). Delhi, India: Oxford University Press.
- Ullman, E. (1996). Come in, CQ: The body on the wire. In L. Cherny & E. R. Weise (Eds.), *Wired Women: Gender and New Realities in Cyberspace* (pp. 3-23). Seattle: Seal Press.
- Ullrich, H. E. (1987). Marriage patterns among Havik Brahmins: A 20-year study of change. *Sex Roles*, 16 (11-12), 615-635.
- United Nations Development Programme. (2006). *Human Development Report 2006: Beyond scarcity: Power, poverty and the global water crisis*. Retrieved November 20, 2006, from <http://hdr.undp.org/hdr2006/pdfs/report/HDR06-complete.pdf>
- Van Acker, E. (2001). Contradictory possibilities of cyberspace for generating romance. *Australian Journal of Communication*, 28 (3), 103-116.
- Varbanov, V. (2002). Bulgaria: Mobile phones as post-communist cultural icons. In J. E. Katz & M. A. Aakhus (Eds.), *Perpetual Contact: Mobile Communication, Private Talk, Public Performance* (pp. 126-136). Cambridge: Cambridge University Press.
- Vershinskaya, O. (2003). Information and communication technology in Russian families: Results of sociological research. In J. E. Katz (Ed.), *Machines That Become Us: The Social Context of Personal Communication Technology* (pp. 117-25). New Brunswick, NJ: Transaction Publishers.
- Vertovec, S. (2004). Cheap calls: The social glue of migrant transnationalism. *Global Networks*, 4 (2), 219-224.

Vincent, J. (2003). Emotion and mobile phones. In K. Nyíri (Ed.), *Mobile Democracy: Essays on Society, Self and Politics* (pp. 215-223). Vienna: Passagen Verlag.

Vodafone. (2005). Africa: The Impact of Mobile Phones. Retrieved October 1, 2006, from <http://www.vodafone.com/assets/files/en/GPP%20SIM%20paper.pdf>

von Laue, T. H. (1987). *The World Revolution of Westernization: The Twentieth Century in Global Perspective*. New York, Oxford: Oxford University Press.

Wallerstein, I. (1974). *The Modern World-System: Capitalist Agriculture and the Origins of the European World-Economy in the Sixteenth Century*. New York: Academic Press.

Walters, T., Quinn, S. R., & Walters, L. M. (2005). Media life among Gen Zeds. *International Journal of Cultural Studies*, 8 (1), 63-82. Retrieved December 8, 2006, from Sage Journals Online

Walther, J. B. (1992). Interpersonal effects in computer-mediated interaction: A relational perspective. *Communication Research*, 19 (1), 52-90.

Walther, J. B. (1996). Computer-mediated communication: Impersonal, interpersonal, and hyperpersonal interaction. *Communication Research*, 23 (1), 3-43.

Walther, J. B., Loh, T., & Granka, L. (2005). Let me count the ways: The interchange of verbal and nonverbal cues in computer-mediated and face-to-face affinity. *Journal of Language and Social Psychology*, 24 (1), 36-65.

Warschauer, M. (2000). Language, identity, and the internet. In B. E. Kolko, L. Nakamura, & G. B. Rodman (Eds.), *Race in Cyberspace* (pp. 151-170). New York: Routledge.

Watson, N. (1997). Why we argue about virtual community: A case study of the Phish.net fan community. In S. G. Jones (Ed.), *Virtual Culture: Identity and Communication in Cybersociety* (pp. 102-132). London: Sage Publications.

Wei, C. (2004). Language and the internet in Uzbekistan. In *Proceedings of the 4th*

Conference on Cultural Attitudes Toward Technology and Communication (CATaC '04) (pp. 393-96). Murdoch, Australia: Murdoch University.

Wei, C. Y. (2006). Not crazy, just talking on the mobile phone: Gestures and mobile phone conversations. In *Proceedings of the 2006 International Professional Communication Conference* (pp. 299-307). Piscataway, NJ: IEEE.

Wei, C. Y., & Kolko, B. E. (2005a). Resistance to globalization: Language and internet diffusion patterns in Uzbekistan. *New Review of Hypermedia and Multimedia*, 11 (2), 205-220.

Wei, C. Y., & Kolko, B. E. (2005b). Studying mobile phone use in context: Cultural, political, and economic dimensions of mobile phone use. In *Proceedings of the 2005 International Professional Communication Conference* (pp. 205-212). Piscataway, NJ: IEEE.

Wei, C.Y., Spyridakis, J.H., & Kolko, B.E. (2006). Information-seeking in digitally emergent society: A case of old wine in new bottles? Manuscript submitted for publication.

Wei, R., & Leung, L. (1999). Blurring private and public behavior in public places: Policy challenges in the use and improper use of the cell phone. *Telematics and Informatics: An International Journal on Telecommunications & Information Technology*, 16 (1-2), 11-26.

Wei, R., & Lo, V.-H. (2006). Staying connected while on the move: Cell phone use and social connectedness. *New Media & Society*, 8 (1), 53-72. Retrieved November 21, 2006, from Sage Journals Online

Weilenmann, A., & Larsson, C. (2001). Local use and sharing of mobile phones. In B. Brown, N. Green, & R. Harper (Eds.), *Wireless World: Social and Interactional Aspects of the Mobile Age* (pp. 92-107). London: Springer-Verlag.

Wellman, B., & Gulia, M. (1999). Virtual communities as communities: Net surfers don't ride alone. In M. A. Smith & P. Kollok (Eds.), *Communities in Cyberspace* (pp. 167-194). London: Routledge.

Wellman, B., Quan-Haase, A., Witte, J., & Hampton, K. (2001). Does the internet increase, decrease, or supplement social capital? Social networks, participation, and community commitment. *American Behavioral Scientist*, 45 (3), 436-455.

Wheeler, D. (2001). New technologies, old culture: A look at women, gender, and the internet in Kuwait. In C. Ess & F. Sudweeks (Eds.), *Culture, Technology, Communication: Towards an Intercultural Global Village* (pp. 187-212). Albany: State University of New York Press.

Whitty, M. T. (2005). The realness of cybercheating: Men's and women's representations of unfaithful internet relations. *Social Science Computer Review*, 23 (1), 57-67.

Whitty, M. T., & Carr, A. N. (2003). Cyberspace as potential space: Considering the Web as a playground to cyberflirt. *Human Relations*, 56 (7), 868-891.

Williams, S., & Williams, L. (2005). Space invaders: The negotiation of teenage boundaries through the mobile phone. *Sociological Review*, 53 (2), 314-331.

Winner, L. (1999). Do artifacts have politics? In D. MacKenzie & J. Wajcman (Eds.), *The Social Shaping of Technology* (2nd ed., pp. 28-40). Buckingham and Philadelphia: Open University Press.

Wong, G. (2006, November 30). Modern romance: Get texted when love is near. *CNN.Com*. Retrieved November 30, 2006, from <http://www.cnn.com/2006/TECH/11/29/mobile.romance/index.html>

World Bank. (2006). *Country Classification*. Retrieved October 2, 2006, from <http://web.worldbank.org/WBSITE/EXTERNAL/DATASTATISTICS/0,,contentMDK:20420458~menuPK:64133156~pagePK:64133150~piPK:64133175~theSitePK:239419,00.html>

Yee, N. (2006). The labor of fun: How video games blur the boundaries of work and play. *Games and Culture: A Journal of Interactive Media*, 1 (1), 68-71.

Yoon, K. (2003). Retraditionalizing the mobile: Young people's sociality and mobile phone use in Seoul, South Korea. *European Journal of Cultural Studies*, 6 (3), 327-

343.

Yoon, K. (2006). Local sociality in young people's mobile communications: A Korean case study. *Childhood, 13* (2), 155-174.

Young, R. J. C. (1995). *Colonial Desire: Hybridity in Theory, Culture, and Race*. New York and London: Routledge.

Yu, L., & Tng, T. H. (2003). Culture and design for mobile phones for China. In J. E. Katz (Ed.), *Machines That Become Us: The Social Context of Personal Communication Technology* (pp. 187-98). New Brunswick, NJ: Transaction Publishers.

Yum, Y.-O., & Hara, K. (2005). Computer-mediated relationship development: A cross-cultural comparison. *Journal of Computer-Mediated Communication, 11* (1). Retrieved November 27, 2006, from <http://jcmc.indiana.edu/vol11/issue1/yum.html>

Yurchisin, J., Watchravesringkan, K., & McCabe, D. B. (2005). An exploration of identity re-creation in the context of internet dating. *Social Behavior and Personality, 33* (8), 735-750.

Zanca, R. (2002). *Cultural Summary: Uzbeks*. Retrieved October 10, 2003, from eHRAF Collection of Ethnography

Zickmund, S. (1997). Approaching the radical others: The discursive culture of cyberhate. In S. G. Jones (Ed.), *Virtual Culture: Identity and Communication in Cybersociety* (pp. 185-205). London: Sage Publications.

Appendix A: Recruitment Text for Bangalore Study

Bangalore is rapidly changing, a place where traditions blend and collide with high tech. We invite you to tell us about life in Bangalore as you experience it. We want to hear what you think about personal relationships, dating, and matrimony, and the resources and tools that you use to support these relationships.

We are looking for participants aged 18-30 who are single, engaged, or recently married. This study will involve a questionnaire, an interview, observations in your various environments, and a diary of media use. We anticipate that the study should take about 3-6 hours of active participation and about 3-6 hours of passive involvement where you allow us to observe you. The study will be spread over 1-2 weeks. Participation in the study is completely voluntary, totally confidential, and has no effect whatsoever on your employment with Microsoft.

To participate or to get more information, please call or send an SMS to Carolyn Wei at [mobile number].

Please feel free to share this announcement with people inside or outside of Microsoft who might be interested in participating. Thank you!

Appendix B: Screening Questionnaire for Bangalore Study

Thank you for your interest in this study. In order for us to learn if you are eligible, we request you answer this questionnaire and return it to our research team. Your answers will be kept confidential. If you have questions or to return the questionnaire, please contact the researcher, Carolyn Wei, at [mobile number] or [email address]. Please remember that we cannot guarantee the confidentiality of any information sent by email.

Your Contact Information

1. Name: _____
2. Current address: _____
3. Mobile number: _____
4. Email address: _____

About You

1. Gender: ___ Male ___ Female
2. Age: _____
3. Which of the following best describes you?
 - ___ Single and interested in a relationship
 - ___ Single and NOT interested in a relationship
 - ___ In committed relationship
 - ___ Engaged
 - ___ Recently married (less than one year)
 - ___ Married (one year and more)
4. Where are you from? _____
5. How long have you lived in Bangalore? _____
6. Your native language: _____
7. Other languages you know: _____

Technology Use

Please check the box that best describes how often you use the following technologies:

	Several times a day	About once a day	Several times a week	About once a week	Less than once a week	Never
1. Television						
2. Telephone						
3. Mobile Phone						
4. Computer						
5. Internet						

1. Is there a computer in your house? No Yes
2. Do you have a mobile phone that you can use whenever you want?
 No Yes

Appendix C: Consent Form for Bangalore Study

Researchers' statement

We are asking you to be in a research study. The purpose of this consent form is to give you the information you will need to help you decide whether to be in the study or not. Please read the form carefully. You may ask questions about the purpose of the research, what we would ask you to do, the possible risks and benefits, your rights as a volunteer, and anything else about the research or this form that is not clear. When we have answered all your questions, you can decide if you want to be in the study or not. This process is called "informed consent." We will give you a copy of this form for your records.

Purpose of the Study

We are studying social attitudes towards personal relationships, dating, courtship, and matrimony. We are also interested in the resources, tools, and technology that you use to support these relationships and activities. By participating in this study, you will teach us about attitudes and behavior related to personal relationships and courtship in India.

Study Procedures

If you choose to participate in this study, we will ask you to answer a questionnaire, participate in an interview, allow us to observe you in your various environments, and keep a diary of your mobile phone use for a week. Questions at various phases of the research study will include describing the technologies that you use and how you use them, the types of relationships that you value, your thoughts about courtship and marriage, and your process for finding a prospective marriage partner. You may refuse to answer any question in any part of this study. We anticipate your total involvement in this study to last about 1.5 weeks.

1. **Questionnaire:** We will ask you to complete a questionnaire about your attitudes and values related to personal relationships, dating, and courtship, and your use of media and technology. Example questions include asking you to rate your level of agreement with statements about the role of arranged marriages in today's world or the impact of mobile phones on society. We will also ask you to list the types of personal relationships that are important to you and describe your use of computers and the mobile phone. The answers to this questionnaire will be confidential. It should take no more than half an hour to complete this questionnaire.
2. **Interview:** We will ask you questions about attitudes and values related to personal relationships and courtship and your usage of technology. Example

questions include asking you to describe your perspectives on courtship and marriage and how you use mobile phones. We will ask you what you like to do with your friends, what you think about marriage, and how you meet or have met prospective partners. Some questions may ask you to show us some features of your phone to talk about your usage. This interview will be confidential. This interview will be audio taped. It should take no more than one-and-a-half hours to complete this interview.

3. **Observations:** We would like to observe you in your various environments, such as home, work, school, and favorite places in order for us to understand the world you live in. We may ask you questions about these spaces or ask you to show us how you do various activities in those environments. For example, we may ask you to show us how you coordinate meetings with your friends when you are away from home with your mobile phone. We will take photographs of you in your environments, avoiding your face when possible. You will have an opportunity to review and approve the photos. These observations will be kept confidential. They should take no more than one hour per site visited, with a total of no more than four hours spent on observations.
4. **Mobile phone diary:** We will ask you to keep a diary for four days related to your mobile phone use, e.g., phone calls made or text messages sent. We will ask you to meet with us once during the four days and once afterwards to talk about the things you wrote in the diary. Keeping the diary should take no more than four days, and the two meetings to discuss the diary should take no more than 45 minutes each.

Risks, Stress, or Discomfort

You may experience the normal stress associated with answering questionnaires or being interviewed. You may also experience stress answering questions about your dating and courtship activities, which are a personal, sensitive topic. You may feel self-conscious while you are being audiotaped or photographed, and if you give us permission to publish the photos, someone who knows you might recognize your image in the photos. You will be given an opportunity to review the photographs at the end of your participation and indicate those you do not wish to be included in possible scholarly publications or presentations. Interview recordings will be destroyed within one month of transcription. If interpreters are used, you may feel discomfort associated with having another person present during the interview. The interpreters are professionally obligated to keep their work confidential, and they have no connection with you or your immediate social network.

Benefits of the Study

You will not directly benefit from participating in the study, but you will help us understand how Indians support their personal relationships today, which in turn may improve information and communication technology design in the future.

Other Information

The data collected in this study will be kept confidential. The link between your name and the data will be retained until five years after the study or October 1, 2011, after which it will be broken. Only the researchers will have access to any identifiable data.

Taking part in this study is voluntary. You may withdraw from the study or refuse to participate at any time without penalty.

Printed name of study staff obtaining consent	Signature	Date
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Subject's statement

This study has been explained to me. I volunteer to take part in this research. I have had a chance to ask questions. If I have questions later about the research, I can ask one of the researchers listed above. If I have questions about my rights as a research subject, I can call the University of Washington's Human Subjects Division at +1(206)543-0098. I will receive a copy of this consent form.

I give do not give my permission for the researchers to audiotape my interview.

I give do not give my permission for the researchers to photograph me in various spaces.

Printed name of subject	Signature of subject	Date
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Copies to: Researcher
 Subject

Appendix D: Photographic Publication Consent Form for Bangalore Study

Researchers' statement

Thank you for participating in this research study. The purpose of this consent form is to explain to you your right to review and approve the photographs that we have taken of you and your environment during this study. We wish to use some of these photographs for future publications and presentations and would like your permission to do so. Please read the form carefully. You may ask questions about what we wish to do with your photographs and anything else about our request or this form that is not clear. When we have answered all your questions, you can decide if you wish to give permission. This process is called "informed consent." We will give you a copy of this form for your records.

Uses of Photographs

We have taken photographs of you and your environment throughout this study. We would like to include some of these photos in scholarly publications and presentations. These photographs will be used only for educational purposes. Your name and personal information will never be publicly linked to these photographs. As much as possible, we have avoided taking personally identifiable photographs. Some photos may include parts of your face. Should your face appear in a picture, it can be digitally blurred.

We ask your permission to use your photos for scholarly publications, public presentations, or educational purposes. You have been given an opportunity to review the photographs and indicate which you approve for public display. The ones you do not approve will be used only for data analysis. You may also indicate the photos you would prefer that we delete. We otherwise ask your permission to keep these photos indefinitely for research and publication purposes.

Printed name of study staff obtaining consent	Signature	Date
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Subject's statement

I have had an opportunity to review the photos referenced above. I give my permission to the researchers to use them as indicated above in this consent form. I understand that my name and personal information will not be published in connection with any such presentation or publication. I will not receive any compensation for the use of the photographs. I will receive a copy of this consent form.

Printed name of subject	Signature of subject	Date
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Appendix E: Questionnaire for Bangalore Study

Thank you for participating in this study. This questionnaire is about personal relationships, social values, as well as the resources, tools, and technology that support them. Please answer these questions to the best of your ability. Your answers will be confidential. You may refuse to answer any question.

About You

1. Gender: Male Female
2. Your age:
3. What part of Bangalore do you live in?
4. Type of home you live in (e.g., hostel, flat, house):
5. Who do you live with?
6. Occupation:
7. Highest level of education:
8. Marital Status: Single Engaged Married Widowed Divorced
9. Number of children:
10. Religion:
11. Native language:

About Your Relationships

1. In your family, who is the most important person to you?
2. Who are your three closest friends?

	First Name	Gender	Approx. Age	# years acquainted
a.
b.
c.

3. When you need help thinking about your personal life, who can you turn to for support?
 - Many people
 - Just a few people
 - Hardly any people

Social Attitudes

Here are some things that some people say about today's culture and society. Please rate your level of agreement with the following statements.

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
1. Bangalore is very progressive compared with the rest of India.					
2. India is a diverse country.					
3. India's culture and traditions are changing.					
4. The old ways and traditions still apply to today's society.					
5. Overall, life is better for people today than it used to be.					
6. Arranged marriages are the best way for young people to meet their life partner.					
7. It is important to get to know someone before you marry him/her.					
8. Love marriages are happier than arranged marriages.					
9. People are not as close to their neighbors as they used to be.					
10. People are not as close to their family as they used to be.					
11. Today's young people have different concerns than the previous generation did.					
12. Parents know what is best for their children.					

Attitudes about Internet

Here are some things that some people say about the internet. When we refer to the "internet," we mean the Web, email, chat, voice calls through a computer, and the like.

Please rate your level of agreement with the following statements.

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
1. People who do NOT use the internet are missing out on things.					
2. The internet is mostly a form of entertainment.					
3. The internet represents a threat to local cultures and ways of life.					
4. The internet is confusing and hard to use.					
5. Internet access is too expensive.					
6. The internet has a lot of information that is relevant to me.					
7. In my opinion, there are many Web sites designed FOR Indians.					
8. In my opinion, there are many Web sites designed BY Indians.					
9. There should be more Web sites in my native language.					
10. It is difficult to use the internet if you don't know any English.					

11. How has the internet changed the way you communicate with family and friends?

Attitudes about Mobile Phones

Here are some things that some people say about the mobile phone. Please rate your level of agreement with the following statements.

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
1. Mobile phones are necessary tools in today's society.					
2. Mobile phone use in public places is irritating.					
3. Mobile phones are confusing and hard to use.					
4. People who live in a big city need a mobile phone.					
5. Mobile phones are distracting.					
6. Mobile phones are more important than computers in India.					
7. Mobile phones are expensive to own and maintain.					
8. People can strengthen their relationships by using mobile phones.					
9. People who have mobile phones are showing off.					
10. Anyone can learn to use a mobile phone.					
11. It is difficult to use the mobile phone if you don't know any English.					
12. There should be guidelines for mobile phone use in public.					

13. How have mobile phones changed the way you communicate with family and friends?

Your Technology

- Which of the following devices are in the place you live now? Check all that apply.

<input type="checkbox"/> Television	<input type="checkbox"/> Console game (Xbox, etc.)
<input type="checkbox"/> VCR	<input type="checkbox"/> Stereo system
<input type="checkbox"/> VCD player	<input type="checkbox"/> MP3 player (iPod, etc.)
<input type="checkbox"/> DVD player	<input type="checkbox"/> Mobile phone
<input type="checkbox"/> Computer	<input type="checkbox"/> Pager
<input type="checkbox"/> Laptop computer	<input type="checkbox"/> PDA (Palm Pilot, etc.)
- Which of these technologies are in the place you live now? Check all that apply.
 - Telephone (land line)
 - Cable TV connection
 - Internet access through modem
 - Internet access through other connection means. Please name:
- If you DO NOT live with your parents: Which of the following devices are in your PARENTS' HOME? Check all that apply.

<input type="checkbox"/> Television	<input type="checkbox"/> Console game (Xbox, etc.)
<input type="checkbox"/> VCR	<input type="checkbox"/> Stereo system
<input type="checkbox"/> VCD player	<input type="checkbox"/> MP3 player (iPod, etc.)
<input type="checkbox"/> DVD player	<input type="checkbox"/> Mobile phone
<input type="checkbox"/> Computer	<input type="checkbox"/> Pager
<input type="checkbox"/> Laptop computer	<input type="checkbox"/> PDA (Palm Pilot, etc.)
- If you DO NOT live with your parents: Which of these technologies are in your parents' home? Check all that apply.
 - Telephone (land line)
 - Cable TV connection
 - Internet access through modem
 - Internet access through other connection means. Please name:
- How often do you make and receive calls on any landline?

<input type="checkbox"/> Several times a day	<input type="checkbox"/> About once a day	<input type="checkbox"/> 3-5 days a week
<input type="checkbox"/> 1-2 days a week	<input type="checkbox"/> Every few weeks	<input type="checkbox"/> Less often

Mobile Phone Use

- How many mobile phones are in the place you live now?

2. Who in your family uses a mobile phone?
3. Do you ever use a mobile phone?
 Yes
 No. **If no: Please skip to the next section "Computer Use" on page 312.**
4. When did you start using a mobile phone?
5. How many times have you changed mobile phone since then?.....
6. Please describe the mobile phone(s) that you currently use. Check all that apply.
 I use a mobile phone that I own.
 I use a mobile phone that is rented.
 I use a mobile phone that my family owns.
 I use a mobile phone that my friend owns.
 I use a mobile phone that my employer/business has provided me.
7. Do you share your mobile phone?
 Yes. If yes: with whom?
 No
8. What motivated you to use the mobile phone? Check all that apply.
 For emergencies or personal safety To make it easier to arrange meetings
 For work or business For updating others on changes in
 I don't have a phone at home plan
 My home phone line is bad quality To keep in touch with friends
 So I can be reached at all times To keep in touch with parents
 So I can make calls at all times To keep in touch with other family
 To send and receive text messages To receive voice mail
 My friends all have a mobile phone Other:
9. Please put a star next to your CHIEF REASON for using the mobile phone in Question 8.

10. What do you commonly do with your mobile phone? Check all that apply.
- | | |
|---|--|
| <input type="checkbox"/> Talk with friends | <input type="checkbox"/> Play games |
| <input type="checkbox"/> Talk with parents | <input type="checkbox"/> Take pictures |
| <input type="checkbox"/> Talk with other family members | <input type="checkbox"/> Listen to music |
| <input type="checkbox"/> Talk with work colleagues | <input type="checkbox"/> Email |
| <input type="checkbox"/> SMS with friends | <input type="checkbox"/> Browse the Web just for fun |
| <input type="checkbox"/> SMS with parents | <input type="checkbox"/> Search for specific information |
| <input type="checkbox"/> SMS with other family members | <input type="checkbox"/> Get news |
| <input type="checkbox"/> SMS with work colleagues | <input type="checkbox"/> Get sports scores |
| <input type="checkbox"/> Alarm clock | <input type="checkbox"/> Other: |
| <input type="checkbox"/> Calendar | |

11. Please put a star next to your CHIEF USE of the mobile phone in Question 10.

12. How often do you send text messages?
- | | | |
|--|---|--|
| <input type="checkbox"/> Several times a day | <input type="checkbox"/> About once a day | <input type="checkbox"/> 3-5 days a week |
| <input type="checkbox"/> 1-2 days a week | <input type="checkbox"/> Every few weeks | <input type="checkbox"/> Less often |

13. On average, how many text messages do you SEND per day?

14. On average, how many text messages do you RECEIVE per day?

15. How often do you MAKE voice calls on the mobile?
- | | | |
|--|---|--|
| <input type="checkbox"/> Several times a day | <input type="checkbox"/> About once a day | <input type="checkbox"/> 3-5 days a week |
| <input type="checkbox"/> 1-2 days a week | <input type="checkbox"/> Every few weeks | <input type="checkbox"/> Less often |

16. How often do you RECEIVE voice calls on the mobile?
- | | | |
|--|---|--|
| <input type="checkbox"/> Several times a day | <input type="checkbox"/> About once a day | <input type="checkbox"/> 3-5 days a week |
| <input type="checkbox"/> 1-2 days a week | <input type="checkbox"/> Every few weeks | <input type="checkbox"/> Less often |

Your mobile phone

1. Please describe your mobile phone service plan and any special features.
(Examples: pre-paid, post-paid, free SMS, unlimited calls to one number, etc.)

2. What mode is your mobile phone normally in?
- Turned off
 - Ringtone mode
 - Silent mode
 - Vibrate mode
 - Ringtone and vibrate mode
 - Other:

3. When do you turn off your mobile phone completely? Please describe the situations.
4. When do you put your mobile phone on silent mode? Please describe the situations.
5. When do you put your mobile phone on vibrate mode? Please describe the situations.
6. When do you usually use your mobile phone? Check all that apply.
 Weekdays Weekends Other:
7. What time of day do you usually use your mobile phone? Check all that apply.
 Morning Afternoon Evening Late night
8. How much, if at all, has the mobile phone improved your relationship with your FAMILY?
 A lot Some Not much Not at all
9. How much, if at all, has the mobile phone improved your relationship with your FRIENDS?
 A lot Some Not much Not at all
10. How much, if at all, has the mobile phone improved your ability to meet new people?
 A lot Some Not much Not at all
11. How much would you miss your mobile phone if you could no longer use it?
 A lot Some Not much Not at all

Computer Use

1. Who in your family uses a computer?

2. Do you ever use a computer?
 Yes
 No. **If no: Please skip to next section "Internet Use" on page 313.**
3. How often do you use the computer?
 Several times a day About once a day 3-5 days a week
 1-2 days a week Every few weeks Less often
4. Where do you use computers? Check all that apply.
 Work Friend's home
 School/college Relative's home
 Computer club or cyber café Other:
 Home
5. What year did you first start using the computer? _____

Internet Use

1. Who in your family uses the internet?
2. Do you ever use the internet?
 Yes
 No. **If no: Thank you, you have finished the questionnaire.**
3. How often do you use the internet?
 Several times a day About once a day 3-5 days a week
 1-2 days a week Every few weeks Less often
4. Where do you use the internet? Check all that apply.
 Work Friend's home
 School/college Relative's home
 Computer club or cyber café Other:
 Home
5. What year did you first start using the internet? _____

6. Which of the following do you do online? Check all that apply.
- | | |
|---|--|
| <input type="checkbox"/> Email | <input type="checkbox"/> Communicate with parents |
| <input type="checkbox"/> Browse the Web just for fun | <input type="checkbox"/> Communicate with other family members |
| <input type="checkbox"/> Search for specific information | <input type="checkbox"/> Communicate with work colleagues |
| <input type="checkbox"/> Get news | <input type="checkbox"/> Listen to or download music |
| <input type="checkbox"/> Get sports scores | <input type="checkbox"/> Watch or download video clips |
| <input type="checkbox"/> Calendar | <input type="checkbox"/> Buy a product online |
| <input type="checkbox"/> Make voice calls over the internet | <input type="checkbox"/> Online auction |
| <input type="checkbox"/> Instant messaging | <input type="checkbox"/> Online banking |
| <input type="checkbox"/> Chat room | <input type="checkbox"/> Other: |
| <input type="checkbox"/> Web cam chat | |
| <input type="checkbox"/> Communicate with friends | |
7. How often, if ever, do you go online to get news or information about your local community?
- Often Sometimes Hardly ever Never
8. How much, if at all, has the internet improved your relationship with your FAMILY?
- A lot Some Not much Not at all
9. How much, if at all, has the internet improved your relationship with your FRIENDS?
- A lot Some Not much Not at all
10. How much, if at all, has the internet improved your ability to meet new people?
- A lot Some Not much Not at all
11. How much would you miss going online if you could no longer access the internet?
- A lot Some Not much Not at all

Appendix F: Personal Interview Questions for Bangalore Study

Thank you for participating in this study. This interview is about courtship, marriage, and the use of technology, especially mobile phones. Since you have given your permission, I will be audio-taping this interview. Your answers will be confidential, and you may refuse to answer any question. You may also ask me questions at any time or take a break.

General Background

1. How long have you lived in Bangalore?
2. If from Bangalore: How is Bangalore different than the rest of India?
If from elsewhere: How is Bangalore different than where you came from?
3. Please describe a typical WORKING DAY for you.
4. Please describe a typical WEEKEND for you.
5. Please tell me about your educational background including higher secondary.
6. What is your annual income approximately?
7. Do you live with your family? [How often do you see your family?]
8. Please tell me about your family. [What do they do? What is their educational background? What is your family's annual income approximately?]
9. Do you send money to your parents? Do you receive money from your parents?

About Career

1. Is this your first full-time job? How long have you worked here?
2. How did you come to work in this technical field?
3. Have you done anything for the first time since you started working here?
4. What do your parents think about your career?
5. How does your work life affect your personal life?

Social Patterns

1. What do you and your friends like to do for fun?
2. What kind of places do you and your friends like to go to?
3. How do you communicate with these friends? How do you keep up-to-date on each other's news?
4. How do you arrange get-togethers with your friends? Tell me about the last time you did this.
5. How do you spend your time with your family?
6. Do you have friends or family who live far away from you? [How do you keep in touch with them?]
7. Do you ever chat or instant message? [How is that experience different than spending time with your friends at [one of your favorite places to hang out]?]

8. How do you think your life is different than your parents' when they were your age?
9. Are you fulfilling your parents' expectations?

Dating and Courtship

1. How important is marriage to you and your friends?
2. How are your attitudes towards marriage similar or different from your parents'?
3. How common do you think arranged marriage is today in Bangalore?
4. How well do you think arranged marriage fits with the lifestyles of young people who are like you?
5. Is looking for a prospective partner different in Bangalore than elsewhere in India?

A. For single people

1. Do you want to get married some time? Do your parents want you to be married?
2. Who will arrange your marriage when it is time?
3. How are your parents currently involved in the process (e.g., are they actively finding prospective matches)?
4. How will you find a prospective partner? [What kinds of materials or resources or people are useful?]
5. What do you want in a prospective partner? What do your parents want?
6. Whose opinions matter to you when considering marriage and looking for a partner?
7. Have you ever had a boyfriend/girlfriend? [What happened?]

B. For single people in a steady relationship

1. Tell me about your friend. How did you meet each other? How long have you known each other?
2. Do you want to get married some time? Do your parents want you to be married?
3. Who will arrange your marriage when it is time?
4. How are your parents currently involved in your relationship? [Do your parents know about it?]
5. What do you want in a prospective partner? What do your parents want?
6. Whose opinions matter to you when considering marriage and looking for a partner?
7. Have you ever had another boyfriend/girlfriend? [What happened?]
8. How much time do you and your friend spend with each other?
9. What kinds of things do you enjoy doing together as a couple?
10. How do you communicate with one another when you are apart?
11. How has the mobile phone affected your relationship?
12. What tool do you think is most important for supporting your relationship?

C. For engaged/married people

1. Tell me about your fiancé/spouse. How did you meet each other? How long have you known each other?
2. Can you tell me about how your engagement/marriage was arranged?
3. How were your parents involved in the process? [How did you inform your parents about your relationship?]
4. What did you want in a partner? What did your parents want?
5. Whose opinions mattered to you when you were considering marriage?
6. Have you ever had another boyfriend/girlfriend? [What happened?]
7. *For married people:* How have you been settling into married life together?
8. How much time do you and your fiancé/spouse spend with each other?
9. What kinds of things do you enjoy doing together as a couple?
10. How do you communicate with one another when you are apart?
11. How has the mobile phone affected your relationship?
12. What tool do you think is most important for supporting your relationship?

Mobile Use

1. Do you remember using your first mobile phone? [What do you remember about that experience?]
2. What do you think about the mobile you have now?
3. Who pays your mobile bill?
4. Generally, what do you use your mobile phone for? [Can you give some examples of the last few things you did with it?]
5. What negative things have you experienced with the mobile phone? [What negative stories have you heard?]
6. How many phone numbers do you have in your phone book? What types of numbers do you keep (friends, work colleagues, services, etc.)?
7. Do you send or receive text messages? Which messages do you choose to save?
8. Do you make intentional “missed calls”? [Can you give me some examples of missed calls you have made?]
9. How would your life change if you didn’t have a mobile any more?
10. Do your parents use mobile phones? [Do they understand the technology?]
11. Do your parents have concerns about your use of the mobile phone?
12. You said you and your friends like to go to _____. What would be worse – being barred from there for the next year or losing your mobile phone?

Wrap Up

Thank you for your time.

1. Was there something I should have asked you but didn’t?
2. Is there anything else you think I should know about the lives of young people in Bangalore?

Appendix G: Mobile Diary Form for Bangalore Study

Thank you for participating in this study. Please log your activities on your mobile phone for four days: day before weekend, weekend, and day after weekend. Although we would be interested in anything you write down, you are free to decide what you include in this diary. It will be kept confidential. If you have any questions or to return this form, please contact Carolyn Wei at [mobile number] or [email address]. Please remember that we cannot guarantee the confidentiality of any information sent by email.

Instructions

1. Please fill out this diary twice a day: at lunch time and in the evening, OR in the morning and at lunch time.
2. Use a new form each time you fill out the diary, e.g., use two forms per day.
3. Use the information from your phone's call and SMS registers, and copy it in the diary.
4. If this is the first time you are filling out the diary, please copy everything in your phone's call and SMS registers, up to 20 of each. Otherwise, copy only new calls or SMS. Add more lines if needed.
5. Please return the form to me every day.
6. Halfway through the four days, we will talk about how the diary is working for you. At the end of the period, we will meet to discuss the things you have written in the diary.

TEXT MESSAGES

Inbox

ID	From whom?	Briefly describe topic of message	Date	Time	Was this SMS related to a previous comm.? if yes, give ID	Did this lead to a meeting, a call to another friend, etc.? if yes, explain.	Your physical location when you received this SMS
401							
402							
403							

Sent Items

ID	To whom?	Briefly describe topic of message	Date	Time	Was this SMS related to a previous comm.? if yes, give ID	Did this lead to a meeting, a call to another friend, etc.? if yes, explain.	Your physical location when you sent this SMS
501							
502							
503							

Other things you have done today with the mobile phone, e.g., download ringtone, alarm clock, play games, etc.:

Appendix H: Example Mobile Diary from Bangalore Study

This mobile diary was submitted by a participant with real names replaced by pseudonyms.

CALLS

Missed Calls

ID	From whom?	Date	Time	Was it an intentional missed call?	Reason for missed call	Was this call related to a previous comm.? if yes, give ID	What was your response to the missed call?	Your physical location when you received this missed call
101	Father	29/07	11:15	No	I hung the phone as I was in a meeting	No	Give a call back.	MSR
102	Unknown	27/07	22:09	No	Unknown	No	Gave a call back	Juice shop
103	Parag	03/08	22:25	Yes	To give a call back	No	Gave a call back	Juice shop

Received Calls

ID	From whom?	Date	Time	Briefly describe topic of conversation	Was this call related to a previous comm.? if yes, give ID	Did this lead to a meeting, a call to another friend, etc.? if yes, explain.	Your physical location when you received this call
201	Father	29/07	11:17	Informed him that I was in a meeting & would give him a call back	101	Yes	MSR
202	Praveen (Public phone)	30/07	17:05	Wanted to know if I was interested to watch a film	No	Yes, 308	Home

ID	From whom?	Date	Time	Briefly describe topic of conversation	Was this call related to a previous comm.? if yes, give ID	Did this lead to a meeting, a call to another friend, etc.? if yes, explain.	Your physical location when you received this call
203	Praveen (Public phone)	30/07	21:40	Wanted to know if we are coming to the juice shop	No	Yes, we meet at the juice shop	Home
204	Transport Helpdesk	31/07	08:55	They sad that the cab is reported, informed them that I do not require the cab	No	No	Home
205	Praveen (public phone)	31/07	9:39	To tell me that he would not be coming home	No	No	Office
206	Praveen	1/08	16:55	General talk	No	No	Office
207	Transport Helpdesk	2/08	08:47	They sad that the cab is reported.	No	No	Home
208	Praveen	2/08	22:22	To let me know that he is waiting at the juice shop	No	We meet at the juice shop	On the way
209	Transport Help Desk	3/08	08:48	They sad that the cab is reported.	No	No	Home
210	PSS lab	03/08	20:12	To enquire if it is ok to physically com to the lab	No	No	Office
211	Parag	03/08	21:54	To know where I was	No	No	On way home
212	PSS lab	03/08	22:12	To enquire if all the severs are to be in the same NLB	No	No	On way to home
213	Praveen (Public phone)	04/08	21:20	To enquire where I was.	No	No	Office

Dialled Numbers

ID	To whom?	Date	Time	Were you making an intentional missed call?	Reason for missed call OR briefly describe topic of conversation	Was this call related to a previous comm.? if yes, give ID	Did this lead to a meeting, a call to another friend, etc.? if yes, explain.	Your physical location when you made this call
301	Transport Helpdesk	29/07	07:26	No	Cancelling the Cab for the day	No	No	Home
302	Parag	29/07	09:20	No	To enquire where he is	No	No	On
303	Carolyn	29/07	11:02	No	To inform her that we were waiting at reception	No	Yes, we meet at the reception	MSR
304	Father	29/07	1:30	No	General conversation	Yes, 201	No	MSR
305	Unknown	29/07	22:10	No	Wanted to know why I received a missed call from this number	Yes, 102	No	Juice shop
306	Transport Helpdesk	30/07	07:05	No	Cancelling the Cab for the day	No	No	Home
307	Parag	30/07	13:05	no	Wanted to know when he was coming home	No	No	home
308	Father	30/07	16:09	No	General conversation	No	No	Home
309	Parag	30/07	17:15	No	Wanted to inform him that I was not interested in the film	Yes, 202	No	Home
310	Transport Helpdesk	31/07	07:15	No	Cancelling the Cab for the day	No	No	Home
311	Praveen (office number)	31/07	11:05	No	Wanted to know why he did not lock the house	No	No	Home

ID	To whom?	Date	Time	Were you making an intentional missed call?	Reason for missed call OR briefly describe topic of conversation	Was this call related to a previous comm.? if yes, give ID	Did this lead to a meeting, a call to another friend, etc.? if yes, explain.	Your physical location when you made this call
312	Father	31/07	13:37	No	General conversation	No	No	Office
313	Parag	31/07	21:41	No	To let him know that I do not need food	No	No	Office
314	Parag	31/07	22:21	No	to enquire where he is	No	No	On way to home
315	Father	01/08	13:11	No	General conversation	No	No	Office
316	Parag	01/08	21:05	No	Asked him to get dinner for me	No	No	Office
317	Sunil (Friend)	02/08	10:55	No	Wanted to know what happened to his mobile	No	No	Office
318	Father	02/08	11:26	No	General conversation	No	No	Office
319	Bluedrat	02/08	14:38	No	To know where I can collect the card	Yes, 404	Yes, I went to the reception to collect the card	Office
320	Parag	02/08	18:49	No	Just to know where hi is.	No	No	Office
321	Parag	02/08	22:11	No	Asked him to come to the juice shop	No	We meet at the juice shop	On the way
322	Father	03/8	16:26	No	General conversation	No	No	Office
323	Parag	03/08	22:30	No	To let him know that I was at juice shop	Yes 103	No	Juice shop
324	Transport Helpdesk	4/08	07:33	No	Cancelling the Cab for the day	No	No	Home

ID	To whom?	Date	Time	Were you making an intentional missed call?	Reason for missed call OR briefly describe topic of conversation	Was this call related to a previous comm.? if yes, give ID	Did this lead to a meeting, a call to another friend, etc.? if yes, explain.	Your physical location when you made this call
325	Father	04/08	11:03	No	General conversation	No	No	Home
326	Parag	04/08	21:05	No	To know if he had dinner	No	No	Office

TEXT MESSAGES

Inbox

ID	From whom?	Briefly describe topic of message	Date	Time	Was this SMS related to a previous comm.? if yes, give ID	Did this lead to a meeting, a call to another friend, etc.? if yes, explain.	Your physical location when you received this SMS
401	Airtel	Description of how to find the unbilled amount	31/07	13:37	No	No	Office
402	Airtel	Telemarketing	31/07	16:33	No	No	Office
403	Airtel	Telemarketing	02/08	11:20	No	No	Office
404	Blue drat	Credit card received	02/08	14:36	No	Yes, 319	Office
405	Airtel	Telemarketing	03/08	07:00	No	No	Home
406	ICICI bank	Telemarketing	03/08	20:53	No	No	Office
407	ICICI bank	Telemarketing	03/08	22:04	No	No	On the way home
408	Airtel	Telemarketing	04/08	05:08	No	No	Home
409	Citi Bank	Telemarketing	04/08	10:41	No	No	Home
410	Airtel	Telemarketing	04/08	15:02	No	No	Office
411	Airtel	Telemarketing	04/08	17:30	No	No	Office
412	Airtel	Telemarketing	04/08	17:41	No	No	Office

Sent Items

ID	To whom?	Briefly describe topic of message	Date	Time	Was this SMS related to a previous comm.? if yes, give ID	Did this lead to a meeting, a call to another friend, etc.? if yes, explain.	Your physical location when you sent this SMS
501	---	---	---	---	---	---	---

Other things you have done today with the mobile phone, e.g., download ringtone, alarm clock, play games, etc.:

1. Used the alarm clock every day to get up.
2. Listened to the radio almost every day.

Vita

Carolyn Y. Wei is a native of Seattle, Washington. She was graduated from Bryn Mawr College with a Bachelor of Arts degree in History. She has also earned a Master of Science in Technical Communication from University of Washington. She has professional experience in the nonprofit and high tech sectors. Her academic papers have been presented and published in a number of conferences and publications, as follows:

Refereed Journal Articles

- Wei, C.Y., and Kolko, B.E. (2005). Resistance to globalization: Language and internet diffusion patterns in Uzbekistan. *New Review of Hypermedia and Multimedia*, 11 (2), 205-220.
- Wei, C.Y., Evans, M.B., Eliot, M., Barrick, J., Maust, B, and Spyridakis, J.H. (2005). Influencing web-browsing behavior with intriguing and informative hyperlink wording. *Journal of Information Science*, 31 (5), 433-445.
- Spyridakis, J.H., Wei, C., Barrick, J., Cuddihy, E., and Maust, B. (2005). Internet-based research: Providing a foundation for Web design guidelines. *IEEE Transactions on Professional Communication*, 48 (3), 242-260.
- Kolko, B.E., Wei, C., and Spyridakis, J.H. (2003). Internet use in Uzbekistan: Developing a methodology for tracking IT implementation success. *Information Technologies and International Development*, 1 (2), 1-19.

Conference Proceedings

- Schusteritsch, R., Wei, C. Y., and LaRosa, M. (Accepted). Towards the perfect infrastructure for usability testing on mobile devices. CHI 2007, San Jose, CA, April 28-May 3, 2007.
- Wei, C.Y. (2006). Not crazy, just talking on the mobile phone: Gestures and mobile phone conversations. In *Proceedings of the 2006 International Professional Communication Conference*, Saratoga Springs, NY, October 23-25, 2006 (pp. 299-307). Piscataway, NJ: IEEE.
- Wei, C., and Kolko, B. (2005). Studying mobile phone use in context: Cultural, political, and economic dimensions of mobile phone use. In *Proceedings of the 2005 International Professional Communication Conference*, Limerick, Ireland, July 10-13, 2005 (pp. 205-212). Piscataway, NJ: IEEE.
- Cuddihy, E., Wei, C., Bartell, A., Barrick, J., Maust, B., and Spyridakis, J. (2005). Conducting remote, internet-based experiments on Web design. In *Proceedings of the 2005 International Professional Communication Conference*, Limerick, Ireland, July 10-13, 2005 (pp. 554-561). Piscataway, NJ: IEEE.

- Wei, C., Barrick, J., Cuddihy, E., and Spyridakis, J. (2005). Conducting usability research through the internet. In *Proceedings of the 2005 Usability Professionals Association Conference*, Montreal, Canada, June 27-July 1, 2005.
- Wei, C., Maust, B., Barrick, J., Cuddihy, E., and Spyridakis, J.H. (2005). Wikis for supporting distributed collaborative writing. In *Proceedings of the 52nd Conference of the Society for Technical Communication*, Seattle, WA, May 8-11, 2005 (pp. 204-209). Arlington, VA: STC.
- Cuddihy, E., Wei, C., Barrick, J., Maust, B., Bartell, A.L., and Spyridakis, J.H. (2005). Methods for assessing Web design through the internet. In *Extended Abstracts of CHI 2005 Conference on Human Factors and Computing Systems*, Portland, OR, April 2-7, 2005.
- Barrick, J., Maust, B., Spyridakis, J.H., Eliot, M., Wei, C., Evans, M., and Mobernd, K. (2004). A tool for supporting Web-based empirical research: Providing a basis for Web design guidelines. In *Proceedings of the 2004 International Professional Communication Conference*, Minneapolis, MN, September 29-October 2, 2004 (pp. 189-194). Piscataway, NJ: IEEE.
- Evans, M., Wei, C., and Spyridakis, J.H. (2004). Using statistical power analysis to tune-up a research experiment: A case study. In *Proceedings of the 2004 International Professional Communication Conference*, Minneapolis, MN, September 29-October 2, 2004 (pp. 14-18). Piscataway, NJ: IEEE.
- Wei, C. (2004). Language and the internet in Uzbekistan. In *Proceedings of the 4th International Conference on Cultural Attitudes towards Technology and Communication*, Karlstad, Sweden, June 27-July 1, 2004 (pp. 393-396). Murdoch, Australia: Murdoch University Press.
- Evans, M., Wei, C., Eliot, M., Barrick, J., Maust, B., and Spyridakis, J.H. (2004). The effect of informative, intriguing, and generic hyperlink wording on Web browsing behavior. In *Proceedings of the 51st Conference of the Society for Technical Communication*, Baltimore, MD, May 9-12, 2004 (pp. 313-317). Arlington, VA: STC.
- Spyridakis, J.H., Wei, C., and Kolko, B.E. (2003). The relationship of culture and information-seeking behaviour: A case study in Central Asia. In *Adjunct Proceedings of HCI International 2003*, Crete, Greece, June 22-27, 2003 (pp. 167-168). Crete, Greece: Crete University Press.

Other Publications

- Cuddihy, E., Wei, C., Bartell, A.L., Barrick, J., Maust, B., Leopold, S.S., and Spyridakis, J.H. (In press). Conducting remote, internet-based experiments on Web design. In G. Hayhoe and H. Grady (Eds.), *Connecting People with Technology: Issues in Professional Communication*. Farmingdale, NY: Baywood.

- Donner, J., Rangaswamy, N., Steenson, M.W., and Wei, C. (In press). "Express yourself" / "Stay together": The middle-class Indian family. In J.E. Katz (Ed.), *Handbook of Mobile Communication Studies*. Cambridge, MA: MIT Press.
- Wei, C. (2004). Formation of norms in a blog community. In L. Gurak, S. Antonijevic, L. Johnson, C. Ratliff, and J. Reyman (Eds.), *Into the Blogosphere: Rhetoric, Community, and Culture of Weblogs*. http://blog.lib.umn.edu/blogosphere/formation_of_norms.html