Social Implications of Mobile Telephony: The Rise of Personal Communication Society

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Abstract

The media landscape has changed dramatically in recent decades, from one predominated by traditional mass communication formats to today's more personalized network environment. Mobile communication plays a central role in this transition, with adoption rates that surpass even those of the Internet. This essay argues that the widespread diffusion and use of mobile telephony is iconic of a shift toward a new 'personal communication society', evidenced by several key areas of social change, including symbolic meaning of the technology, new forms of coordination and social networking, personalization of public spaces, and the mobile youth culture. The conclusion speculates on future trends in the sociotechnological climate.

Like the television in the 1950s and the Internet in the 1990s, mobile telephony has emerged as one of the defining communication technologies of our time (Castells et al. 2007). Mobile subscriptions are well into the billions worldwide and growing (International Telecommunication Union 2007). Not surprisingly, the burgeoning adoption and use of mobile communication technology contributes to a host of social consequences, including new representations of the self, new forms of social connection, and private use of public space. The purpose of this essay is to consider some key areas of social change resulting from the widespread adoption and use of mobile telephony, while theoretically situating them in the dynamic relationship between technology and society. Drawing from Marshall McLuhan, Manuel Castells, and others, we argue that the social changes that come out of mobile communication mark a distinctive step in the progression from the age of traditional mass media to a new personal communication society.

McLuhan (1962, 1964) argued that characteristics of communication technologies shape cognition and social organization. Accordingly, the development of print moved society into a visual age, while television, radio, and film helped move us into a mass age. This line of reasoning is succinctly captured by McLuhan's (in)famous assertion that 'The medium is the message'. During the mass age of the middle twentieth century,

mediated communications were characteristically one-way transmissions, broadcast from media institutions to the public at large. Relative to today's communications environment, media consumption during the mass age involved little human agency and little personalized content.

More recently, Manuel Castells developed a theory of equal ambition about networked flows of information. According to Castells (2000), information and communication technologies of the 1980s and 1990s nourished a shift in social organization characterized by decentralized, flexible, network nodes based on shared interests rather than shared geographic space. Similar to McLuhan's characterization of the mass age, Castells described this pervasive shift in social order as the rise of a new network society (2000). In fact, Castells explicitly invoked McLuhan by asserting, 'The network is the message' (2001). It is important to note that while McLuhan attributed social change to the development and use of technologies, Castells did not. Instead, he argued that changes in communication technologies *nourish* changes in social order rooted in preexisting social conditions. Castells explained, 'My thesis is that the rise of the informational, global economy is characterized by the development of a new organizational logic which is related to the current process of technological change, but not dependent upon it' (2000, 164). Despite their differing views on technological determinism, one can draw a theoretical parallel between McLuhan and Castells in that both use communication technologies as a framework for understanding society, because, in a sense, they are characteristic of social order. This is not to suggest that technologies determine society, but that they can serve as a lens for examining how social order is produced and reproduced through systems of communication.

The present article draws from and extends this line of thinking by arguing that we have entered a new personal age of communication technologies. That is, the communication technologies predominant in today's society, particularly mobile telephony, are characteristically personal in nature. Furthermore, the personal nature of technologies such as mobile telephony serves as a useful framework for understanding the social consequences that come out of their adoption and use. Unlike the progression from McLuhan's mass age to Castells's network age, today's personal age is not a radical departure from its predecessor, but rather a natural extension of it. This is to say that the age of personal communication technologies, exemplified by the widespread adoption and use of mobile telephony, is a nuance and accession of the network society of the 1990s. That said, personal communication technologies are distinctive from other network technologies (e.g. the computer) in that they are often worn on body, highly individualized, and regarded as extensions of the self. It has been said that they make us individually addressable regardless of where we are (Ling forthcoming). We argue here that this shift toward an age where personal communication devices are predominant gives rise

to a number of important social changes. The remainder of this essay will examine some of the key changes as they relate to the increasingly personal nature of communication technologies, with a focus on the mobile phone.

Symbolic meaning of the mobile phone

The proliferation of mobile phones and other wearable media has challenged traditional conceptualizations of the relationship between communication technology and the body. Mobile phones are unique from most other interactive media because they can be worn on the body. Laptops are portable, as are mobile phones, but there is an important distinction to be made between portability and wearability. Both offer increased flexibility in where and when one can connect with others; however, the latter affords communication while physically in motion, which contributes to the personalization of the mobile telephony. As Vincent (2005, 120–21) explained, 'The very act of using a mobile phone involves the simultaneous engagement with more senses than we use for other computational devices as we simultaneously touch, hear and see via the mobile phone in order to keep in touch with our buddies'. This integration with the senses and corporeal attachment opens up new forms of emotional attachment and possibilities for symbolic representation of the self.

As is the case with other media, style is an important consideration when purchasing a mobile phone (Lobet-Maris 2003). But compared to other personal and portable technologies, the mobile phone tends to be regarded as characteristically stylish (Fortunati 2005; Katz et al. 2003). This is in large part due to the highly personal nature of the technology. Opposed to the domestically shared landline telephone, the mobile is an individual artifact, worn on the body, and, therefore, not attached to a physical location (Ling 1997). As a result, many mobile phone users regard the handset as an extension of the self (Gant and Kiesler 2001; Hulme and Peters 2002). In fact, in Finland, the mobile phone is commonly referred to as *kännykkä*, which means 'an extension of the hand' (Mäenpää 2000; Oksman and Rautiainen 2003). Mobile phones can symbolically represent the self through their brand, color, shape, ring tones, and ornaments of adornment. Young people are particularly known for embracing the mobile phone as a form of symbolic expression (Alexander 2000; Green 2003; Lobet-Maris 2003; Skog 2002). Beyond personal flair, young people rely on the physical appearance of a mobile phone to represent social status and group affiliation (Skog 2002; Taylor and Harper 2001), which may explain why the fashion of the technology is commonly determined through social network interaction (Campbell and Russo 2003).

The fashion of a mobile phone is so integral to some users that it actually intersects with the function of the technology. For example, Campbell (2008) found a positive empirical link between perceptions of

the mobile phone as fashion and use of the technology as means for relational expression, whereas there was no relationship found between fashion and mobile phone use for instrumental purposes, such as logistical coordination and safety/security. In addition, Katz and Sugiyama (2005) found that some mobile phone users are willing to trade off certain functionalities for the style of their handset. Clearly the fashion of the technology is socially significant to the users who are forming and expressing their identity.

In addition to those who use the technology, those who study it also find fashion to be socially significant in their persistent efforts to theoretically explain findings in the research (Sugiyama 2006). Applying uses and gratifications theory, Leung and Wei (2000) argued that major motives for mobile phone use are fashion and status because the phone provides a means of symbolic expression of social identity. Other scholars (e.g. Ling 1997; Woolgar 2005) have drawn upon Erving Goffman to suggest that the symbolic properties of the mobile phone are part of the strategy to manage front stage performances in the presentation of self. The symbolic meaning of the mobile phone was a major inspiration in the formation of Katz and Aakhus's (2002) theory of apparatgeist. Apparatgeist, which literally means the spirit of the machine, is a framework developed to explain consistencies in social change that come out of the adoption and use of mobile phones and other personal communication technologies (PCTs). According to Katz and Aakhus (2002), human beings share a universal orientation toward communication, which manifests in how we think about and use PCTs. The highly symbolic nature of mobile phones and other PCTs is one of the most prominent areas of social change to which apparatgeist draws attention. What lies at the very core of their theoretical framework is the increasingly personal nature of communication technology in the desire for 'perpetual contact'. Katz and Aakhus's notion of perpetual contact resonates with Simmel's (1949) 'sociability' and Peters's (1999) 'pure communication', all of which suggest an innate human drive toward social interaction. Similarly, Oldyzko's (2000) historical review of mediated communication reveals the traditional preference for interpersonal contact as opposed to person–machine or broadcast forms of communication. In a similar vein, we assert here that the symbolic significance of mobile communication devices is part and parcel of the progression from a mass to a network toward a personal communication society.

New forms of coordination and social networking

This shift in the relationship between communication technology and society manifests not only in the style of mobile communication devices, but also in how they are used. In their seminal research on the functional uses of the technology, Ling and Yttri (1999, 2002; Ling 2004) identified some primary categories for mobile phone use. Two of their categories

depict new forms of coordination: micro- and hyper-coordination. Micro-coordination entails instrumental uses of the mobile phone, such as coordinating basic logistics, redirecting trips that are already under way, or making plans with others entirely 'on the fly'. Hyper-coordination refers to the expressive and relational dimensions of mobile communication, such as chatting with family members or occasionally checking in with friends via text messaging.

As in the case of fashion, we see these new forms of coordination, both instrumental (micro) and expressive (hyper), as indicative of the highly personal nature of mobile telephony. In the case of micro-coordination, schedules are softened as individuals use their mobile phones to overcome traditional restrictions of space and time (Ling 2004). In this way, space and time are *personalized* through mobile communication. That is, individuals reconstruct the meaning of space and time for personal purposes as they rely on mobile telephony rather than set places and set times in their efforts to coordinate with others. Castells et al. (2007) described this process of reconstructing space and time as the 'space of flows' and 'timeless time'. In the space of flows, places are given new meaning as they become regarded and used for their ability to support the flow of networked interaction. Castells et al. underscored the personalization of space when they explained that in the space of flows, 'places do exist, including homes and workplaces, but they exist as points of convergence in communication networks created and recreated by people's purposes' (2007, 172). Time is also personalized as it becomes desequenced or compressed through networked interactions, hence, the phrase 'timeless time'. To be fair, the personalization of space and time did not begin with mobile-mediated micro-coordination. Indeed, these new spatiotemporal forms were an integral part of the transition toward a network society in the last few decades (Castells 2000). Certainly, the Internet and other technologies have played an important role in the shifting meaning of space and time, as have other changes in social life such as urbanization, suburbanization, etc. However, mobile communication has taken the personalization of space and time to new levels as individuals exploit the flexibility afforded by the technology through micro-coordination. This is not to suggest that space and time are personalized to the same extent and in the same ways by all types of users, but that new meanings for them, however varied, are shaped through the use of network technologies, especially those that can be used virtually anytime anywhere. Indeed, 'the diffusion of mobile communication technology greatly contributes to the spread of the space of flows and timeless time as the structures of our everyday life' (Castells et al. 2007, 171).

In addition to micro-coordination, we also view hyper-coordination as a distinctive practice that comes out of and extends the increased personalization of mediated interaction. As noted, hyper-coordination refers to expressive use of the mobile phone, and may take the form of either

sustained interactions or short messages. Licoppe (2003) characterized
sustained interactions over the phone as the 'conversational mode', which
can range from small talk and idle chatting to in-depth discussion of more
highly personal matters. The 'connected mode', on the other hand, refers
to frequent and brief voice or text messages, such as calling just to say 'I
love you' (Castells et al. 2007). While the 'conversational mode' is typical
of both landline and mobile communication, the 'connected mode' is
primarily a mobile-mediated phenomenon (Lai 2007; Licoppe 2003).
Oftentimes these types of messages appear to be meaningless in content,
but as Johnsen explained, 'The communication has ... a very important
function apart from the instrumental exchange of information. It becomes
an information carrier-without having content or function except to sustain
the idea of a social fellowship' (2003, 163). These 'digital gifts' are especially
common among adolescents and can be compared to the traditional teen
practice of passing notes (Johnsen 2003; Ling and Yttri 2002). Whether
conversational or connected in nature, hyper-coordination via mobile
telephony is laden with 'expressive–symbolical content' with the bonding
properties of relational glue (Licoppe 2003, 164).

Like micro-coordination, hyper-coordination is both a reflection and
extension of the trend toward personalization of communication media.
By definition, what distinguishes hyper- from micro-coordination is the
personal nature of the communication content (Campbell 2008; Ling
and Yttri 1999, 2002; Ling 2004). Beyond the content of commun-
ication, the social relationships fostered by hyper-coordination are becoming
more personal as well. It is quite clear that mobile communication
strengthens the personal bonds of social network ties (Campbell and
Russo 2003; Campbell and Kelley 2006; Ling 2004; Park 2005). But it
also contributes to the personalization of social networks in the sense that
they are increasingly more selective, as opposed to traditional communities
based on shared geography. As a result, we are seeing a trend toward
person-to-person connectivity through new communication technologies
as opposed to place-based connectivity (Wellman 2001). Wellman argued
that with the continued growth of new communication technologies, 'the
person – not the place, household or workgroup – will become even
more of an autonomous communication node ... The person has become
the portal' (2001, 238). And so in a very literal sense, social networks are
becoming more *person*-al, which is why they are increasingly referred to
as 'personal community networks' (Otani 1999; Wellman and Potter 1999)
and 'personal communication networks' (Campbell and Russo 2003).
Once again, it is important to acknowledge that this is a trend that did
not begin with mobile communication. However, as is the case with the
reconstruction of space and time, the widespread adoption and use of
mobile telephony has played an important role in elevating this trend
to new levels. Miyata et al. explained, 'The change from place-based
inter-household ties to individualized person-to-person interactions and

specialized role-to-role interactions has been facilitated by the Internet *and especially by wireless personal communication*' (2005, 430, emphasis added).

Personal use of public space

In addition to the fashion and function of the mobile phone, the progression toward a personal communication society can also be seen in the ways public spaces are being appropriated for personal purposes through mobile communication. The mobile phone is now a common artifact in myriad public settings, offering a means for social connection for its users and unsolicited melodies, chirps, and half conversations for copresent others. Because social norms for behavior in public settings often conflict with those for phone conversations (Love and Kewley 2005; Palen et al. 2001), mobile phone use in public presents as many challenges as it does opportunities, and has consequently become an active area of social science research. Studies have examined mobile phone use in numerous settings (see, for example, Campbell 2004; Campbell and Russo 2003; Ling 1997, 2002; Murtagh 2001; Rice and Katz 2003; Wei and Leung 1999), yet there remains 'no public consensus as to what should be appropriate boundaries or acceptable etiquette for these private behaviors in public space' (Wei and Leung 1999, 13). In essence, the boundaries between the private and public are constantly being negotiated.

One consequence of mobile phone use in public is that copresent others are unwittingly cast into the role of audience member. Even though conversations are directed toward those on the other line, bystanders who overhear mobile phone conversations 'are an audience despite themselves' (Fortunati 2003, 11). Fortunati compared this phenomenon to a game, describing it as 'a linguistic treasure hunt, which consists in being able to reconstruct the meaning starting from the few items of information' (p. 11). Paragas (2005) found a similar attitude from bystanders who were sometimes curious about other peoples' mobile phone conversations. One participant in his study even considered it a form of entertainment to surreptitiously listen in on sensitive topics. Ling (1997), on the other hand, found bystanders to be largely offended and/or irritated. Participants in his study and others (e.g. Caporael and Xie 2003; Wei and Leung 1999) considered it inappropriate to talk on the mobile phone in a variety of settings, including restaurants, stores, churches, meetings, trains, buses, and theaters. Campbell and Russo (2003) found that participants were particularly appalled by mobile phone use in classrooms and movie theaters. Likewise, Campbell (2006) found that both faculty and college student participants in a study were seriously troubled by mobile phones in the classroom and supported formal policies restricting their use.

It is important to recognize that emerging innovations and appropriations provide new opportunities to mitigate the atomization of public space

(Humphreys 2007). Still, those who use the technology in public commonly carve out personal territories by erecting illusory perimeters that have been described as 'symbolic fences' (Gullestad 1992; Ling 1997). Symbolic fences are constructed through various forms of nonverbal behavior during a phone call, such as turning away from others, diverting one's eyes, and speaking quietly (Campbell 2004; Ling 2004; Murtagh 2001; Paragas 2005). While some may wish to argue that mobile communication *privatizes* public space, we believe that for many situations, it is more accurate to characterize this practice as *personalizing* public space. Considering mobile phone use in restaurants,

> We become quite accomplished at ignoring others who are in quite close proximity through the use of a fictive curtain between tables that are, in reality, quite close to each other or even the very same table. These barriers allow each dining party to maintain the notion of a type of privacy that is, more or less open for all to see and hear. (Ling 1997, 7)

In this case, talking on a mobile phone involves the personal use of communal or shared space, without being private at all. In a very literal sense, 'private' suggests a conversation is shielded from others, while 'personal' refers to someone's individual affairs, whether they be shielded or not.

This distinction between private and personal use of public space is meaningful in the context of our overarching argument. That is, the personalization of public space is a key social consequence of the shift from the age of traditional mass media to today's age of personal communication technology. Like other social consequences of mobile telephony, personal use of public space is not new. Individuals have always made personal use of public spaces through media consumption. Consider, for example, the common practice of reading while riding on public transportation. However, mobile communication is a distinctive form of the personalization of public space with distinctive effects. First, unlike reading in public, talking on a mobile phone can force copresent others into the uncomfortable position of involuntary eavesdropping (Ling 1997, 2004). Aside from being irritating, this situation can lead to a unique form of embarrassment. As Ling noted, 'This is a special type of embarrassment, namely that we are "embarrassed for the other" that is, we are embarrassed for the sake of those persons who are forcing us to be eavesdroppers ... we are also embarrassed for the whole situation' (2004, 141). In addition to coerced eavesdropping, mobile communication exacerbates the challenge of 'absent presence' (Gergen 2002). Absent presence refers to being physically present, but mentally and socially elsewhere. Newspapers, television, radio and other forms of traditional mass media certainly contribute to absent presence. However, Gergen pointed out that these are monologic media, meaning the flow of communication is a one-way transmission. Dialogic media, such as the mobile phone, intensify the state of absent presence because 'in contrast to monologic technologies, one

participates in the construction of the world ... when we are listening to voices from afar we are no longer building the realities and moralities of the local together' (Gergen 2002, 231–32). Therefore, mobile communication around copresent others not only personalizes public space, it also personalizes the communal experience of being in that space. In this sense, we view mobile communication in public settings as a key social consequence associated with the shift toward a personal communication society.

The mobile youth culture

Mobile communication and the social consequences associated with it are experienced by individuals of many walks of life – young, old, rich, poor, and in countries all over the world. Yet, nowhere is this more apparent than in the lives of young people, which is why we and others pay special attention to 'the mobile youth culture' (Castells, et al. 2007; Ling 2004). The personalization of mobile communication is amplified among young people in each of the areas of social change discussed so far. While the mobile phone can serve as a status symbol and article of fashion for its users *in general* (Fortunati 2003; Katz 2006; Katz and Sugiyama 2005), young people have especially come to be embrace the technology for its symbolic significance. As Ling noted, 'the mobile phone has become an icon for contemporary teens in many countries' (2004, 103). New forms of coordination and social networking comprise another area of social change for users of all ages, but especially for youth. Adolescents and young adults are known for their distinctive uses of the mobile phone to establish, maintain, demonstrate, and reinforce social network ties (see, for example, Ling 2004; Ling and Ytrri 1999, 2002; Taylor and Harper 2001). Ling (2004, 2007) explained that these uses of the mobile phone play into the emancipation of teens as they develop their own independent identities. Mobile phone use in public is another area where we see evidence of trends for younger users. In a study of mobile phones in college classrooms, Campbell (2006) found no significant differences between faculty and students attitudes, but there were differences among age groups. Namely, the youngest age group (18–23 years old) reported significantly higher levels of tolerance for mobile-related disturbances than the rest of the participants. These and other findings clearly show that mobile communication is integral in the lives of young people. Theorists in the field have even suggested there is an international youth culture in which the mobile phone plays a role (Castells et al. 2007; Katz et al. 2003).

If there is indeed a 'mobile youth culture' (Castells et al. 2007, 127), it begs the question of why. According to Ling (2004), the answer lies in key elements of the metamorphosis from childhood to adulthood. That is, young people are using the mobile phone to help configure important social developments in their lives. These changes can be seen in many key areas, including peer relations, domestic ties, and identity formation.

Planning social activities is a priority for many teens and young adults, and the 'real-time' nature of mobile communication plays a vital role in this process. Thus, if a social gathering changes, it is easy to get word out. If a party is boring, those who arrive first can send a message to others and alternative plans can be developed. Privacy is an important nuance to these novel forms of connection and coordination. Much of what young people have to say to one another can now more easily be said (or thumbed) 'under the radar' of their parental observation. Thus, the mobile phone not only lowers the threshold for interaction among young people, it does so in a way that offers increased privacy and autonomy from their parents.

Mobile communication has reconfigured the way young people interact with their peers and parents in other ways too. For example, use of text messaging exclusively with friends, while relegating parents to voice calling or voice mail, allows them to utilize characters that are unique to their social networks, hence, demonstrating network membership and sharpening the boundary separating insiders from outsiders (Ling and Yttri 2002; Taylor and Harper 2001). It allows for a type of 'connected presence' where peers are continually updated as to one another's situation (Licoppe 2003). Previous to the adoption of the mobile phone, individuals would have more bounded interaction with friends. They would perhaps save bits of information in anticipation of their next meeting and then use that time to update each other. The mobile telephone means that there is no longer the need to deal with this backlog of information. The members of a social group are frequently updated as to the issues and events taking place among their peers.

Finally, the mobile phone serves as a form of identity for young people. The brand and the model can say much about the owner. In the words of a young informant in one of Ling's group interviews: '*If you have a Nokia you are cool; if you have a Motorola or a Sony Ericsson you're a business guy*' (2004, 104). The identity of young people is also played out in the number of names in the contact register, the number of SMS messages received recently, ring tones, wall papers, and special icons. As Castells et al. pointed out, 'It is not just fashion, but identity' (2007, 254).

In essence, we believe the recent emergence of the mobile youth culture can be explained by the desire for enhanced personal autonomy in the formation of identity – a highly social and symbolic process. Young people rely on peer group interactions and social network ties to establish a sense of self, and mobile communication affords greater freedom for them to carry out their social relations as they see fit. It plays such an integral role in the lives of young people that it has actually become an important part of who they are, feeding into the symbolic meaning of the technology. As a result, the mobile phone is among the most *personal* of today's PCTs, and, therefore, we consider it iconic of the rise of personal communication society.

Conclusion

The core argument of this article is that we are experiencing an historical movement toward a personal communication society, characterized by the widespread development, adoption, and use of PCTs, such as the mobile phone. The assertion that mobile communication contributes to an entirely new form of social order would be an overstatement. As explained above, we consider this period of social change as part of a sociotechnological transition already in progress, which Castells and others have described as the network society. Hence, the parameters of our thesis are bound by the delimitation that mobile communication adds a unique new flavor to the social landscape, rather than creates an entirely new one. This position shares similarities with Goggin's (2006, 2) that the cell phone 'has become a central cultural technology in its own right'. This raises questions about what is so distinctive about mobile telephony. Beyond its unprecedented rate of diffusion and the mobility factor, our answer is personalization, which plays out in a number of important social dimensions. Except in cases of mobile sharing (Steenson and Donner forthcoming), the technology is attached to an individual person, giving rise to personalization in how it looks, sounds, and operates – even what it means to the user. Mobile communication also contributes to the personalization of communication networks in the sense that it fosters selectivity of network ties and cohesion within peer groups. In fact, some are concerned that social networks can even become too personalized to the extent that there is a 'telecocooning' effect (Habuchi 2005). Communal spaces are also personalized through use of the technology, which can lead to its own form of 'cocooning' as individuals shut themselves off from copresent others while plugged into their mobile devices (Ito et al. forthcoming).

Although we consider mobile communication as a predominant medium of this time period, we also feel that it is not the only one that contributes to and characterizes personal communication society. Numerous other devices are part of this trend, including iPods, MP3 players, portable DVD players, PDAs, Blackberries, and even automobile navigation systems. We have selected the mobile phone to illustrate our argument because of its remarkable reach, and because the social changes associated with its use are arguably the most salient of all PCTs. Hence, we consider the mobile phone worthy of dedicated scholarly attention, but not an artifact of solitary significance. In fact, it is likely that technological convergence will soon make the term 'mobile phone' an inadequate description of the technology. Perhaps we have already reached this point, considering the device is commonly used as a computer, camera, video recorder, television, music player, debit card, personal scheduler, alarm clock, and much more (Lievens et al. 2007).

   In addition, we acknowledge that the areas of social change addressed in our argument also reflect a rather narrow scope. Symbolic meaning, new forms of coordination and social networking, use in public, and the mobile youth culture are among the most prominent social consequences of the technology, for both those who experience it as well as those who study it. However, this is far from an exhaustive list of areas of social change that come out of mobile communication and the rise of personal communication society. One additional example is peer-to-peer journalism, in which regular citizens become eye witness journalists by capturing and broadcasting news events using their mobile devices (Goggin 2006; Gye 2007). This form of journalism was experimented with in 2000 (Rheingold 2002), and today it is common for local and national news broadcasts to show images captured and distributed from mobile camera phones. More decentralized venues, such as YouTube are being used in conjunction with mobile devices to further this trend, evidenced by the leaked mobile video footage of the hanging of Saddam Hussein. Even political power is becoming more personalized through the use of PCTs. Castells (2007) has argued that media constitute the space where political power is decided. Traditionally, that 'space' was primarily located in mass media formats such as television and radio. The explosive adoption and use of PCTs has created new spaces in which power, as well as counterpower, are played out. Castells explained, 'the rise of insurgent politics cannot be separated from the emergence of a new kind of media space ... Appropriating the new forms of communication, people have built their own system of mass communication, via SMS, blogs, vlogs, podcasts, wikis, and the like' (2007, 246–47). Castells has dubbed this merging of mass communication with PCTs as 'mass self-communication'. We view it as yet another area of social change characteristic of the emergent personal communication society.

   As explained above, our argument regarding the rise of personal communication society explicitly draws from Castells's theory building on 'the network society' (2000). We do not consider the new personal communication society as a departure from the network society, but rather as part of the progression of it that offers its own distinctive social consequences. It does not take an oracle to speculate on what the next step in this progression might be. Considering communication and information technologies are becoming smaller, more personal, and more connected to the body, one might argue the next step will be the predominance of biotechnology. Already we see evidence of this as an emergent trend. For example, radio frequency microchips can be implanted in human flesh as personal identification devices (Graafstra 2007; Katz 2007). While it may sound futuristic, this practice is not all that new. Several years ago, as part of the first author's move to Hawaii, he was required to have microchips implanted in his two cats so that the state quarantine station could access their identification and vaccination information (part of Hawaii's strategy

for remaining rabies free). Others, on the other hand, might argue the next step will be the growth of 'sentient' objects, that is, information and communication technologies embedded in the surrounding environment. Rheingold (2002) has speculated about an era when computers disappear because the information they carry is embedded in the environment. He explained that in such as era, 'Odd new things become possible. Shirt labels gain the power to disclose what airplanes, trucks, and ships carried it, what substances compose it, and the URL of a webcam in the factory where the shirt was manufactured' (p. 85). In an era of sentient things, the physical world will undoubtedly be filled with what Rheingold described as 'virtual graffiti'.

But for our conclusion, we return to the present. Our point of departure in this paper was the suggestion that the technologies we use are characteristic of the society in which we live. Based on the analysis outlined here, we see that this is indeed the case as we transition from an age of broadcast media toward one in which communication technologies are increasingly personal in nature, giving rise to new symbolic meanings, new forms of networking and coordination, new uses of public space, and new expressions of youth culture.

Short Biographies

Scott Campbell's research explores the social implications of new media, with an emphasis on mobile communication practices. His recent studies have investigated cross-cultural trends, mobile phone use in social networks, and use of the technology in public settings. His research appears in *Communication Monographs*, *Journal of Applied Communication Research*, *Communication Education*, *New Media & Society*, *Communication Research Reports*, *Qualitative Research Reports in Communication*, *Sociology Compass*, and other scholarly venues. In addition to pursuing his own research, Professor Campbell is launching a series of edited books through Transaction Publishers with Rich Ling as volume coeditor and James Katz as general series editor. Volume I of the new *Mobile Communication Research Series* is entitled *The Reconstruction of Space & Time through Mobile Communication Practices*. Prior to joining the University of Michigan in 2005, Professor Campbell worked in the wireless industry, earned a PhD from the University of Kansas, and spent 3 years teaching and conducting research at Hawaii Pacific University on the Hawaiian island of Oahu.

Yong Jin Park's research centers on social and policy implications of new communication technologies. His previous research spans the field of comparative communication policy, media institutions, and new media users. He presented a number of articles in such conferences as the Telecommunications Policy Research Conference (TPRC), International Association for Media and Communication Research (IAMCR), and Association for Education in Journalism and Mass Communication (AEJMC).

Currently, he is working on his dissertation that seeks user-driven policy solutions for Internet privacy. He holds an MA from Annenberg School for Communication at the University of Southern California.

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