ARTICLE

Cellphones in public: social interactions in a wireless era

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Abstract

Cellphones provide a unique opportunity to examine how new media both reflect and affect the social world. This study suggests that people map their understanding of common social rules and dilemmas onto new technologies. Over time, these interactions create and reflect a new social landscape. Based upon a year-long observational field study and in-depth interviews, this article examines cellphone usage from two main perspectives: how social norms of interaction in public spaces change and remain the same; and how cellphones become markers for social relations and reflect tacit pre-existing power relations. Informed by Goffman's concept of cross talk and Hopper's caller hegemony, the article analyzes the modifications, innovations and violations of cellphone usage on tacit codes of social interactions.

Key words

cellphones • mobile phones • public space • social interaction • wireless technologies

New technologies such as wireless communication devices are currently at the center of both scrutiny and fascination. As mobile phone subscriptions continue to rise, questions are raised about the effects of these new communication technologies. How do these technologies change

people and their social relations? Some have suggested that mobile phones 'affect every aspect of our personal and professional lives either directly or indirectly' (Katz and Aakhus, 2002: i).

While important research has been done on looking into the effects of cellphones, one should not overestimate the effects of new technologies (Katz and Aakhus, 2002). Rather than follow a technological deterministic research agenda, Williams (1990) suggests understanding the societal context in which a technology is produced as a means of understanding its function in society as well as its reflection of society. By focusing only on the effects of technology one can misunderstand the greater social and cultural context that it reflects.

Much research has examined how communication technologies reflect the social and cultural world in which they are situated. Fischer (1992), Hopper (1992), Katz (1999), Pool (1977), Sarch (1993) and Umble (1996) all provide interesting examinations of the social uses and effects of the telephone. This research provides a great jumping-off point for examining cellphone usage. In Marvin's (1988) analysis about the introduction of electricity and the telephone in the late 19th century, she argues that communities use new technologies to try and solve old problems of managing time and space in communicative relationships. In that process, users of new technologies alter customary social distances among citizens. To manage the anxieties that result from these shifts, they must invent new conventions of social trust appropriate to these new technologies. Similarly, Zuboff (1984) suggests that technological innovations do not lead to discrete effects, but instead alter the social and organizational fabric of our world. The effects of new technologies are not direct, but negotiated through people's construction and use of them.

This study aims to build on this body of literature by showing that new media, in particularly cellphones, are quickly surrounded by common social rules and dilemmas. New technologies provide a new place for people to work out these problems and socialize in ways with which they are already familiar. Over time, these interactions create a whole new social landscape. Therefore, in addition to research on new technologies, one can look to research on social interaction to understand how people use cellphones. Researchers such as Goffman (1963, 1971), Grice (1972), Hopper (1981, 1992), Maynard and Zimmerman (1984), Shimanoff (1980) and Sudnow (1972), provide analyses for the way in which people interact and behave in social contexts. This study applies specifically Goffman's (1963) and Hopper's (1992) work on normative roles for social interaction to cellphone use in order to gain a greater understanding of this new social landscape arising in a wireless era.

Goffman and Hopper each offers us nuanced understandings of norms for social interaction that are applicable to this study. In order to make sense of

how wireless technology might change social interaction in public spaces, first one must understand social interactions in public spaces before the introduction of such technology. Goffman's (1963) observations of behavior in public spaces provide insights into the norms for social interaction. Specifically, he offers models for normative behavior in public spaces. Goffman's insights provide a starting place from which to explore the social uses and effects of cellphones in public.

While Goffman offers models for normative behavior in public space, Hopper (1992) suggests tacit social rules for traditional telephone use. Using Hopper's models of normative behavior for telephone conversations as a base, one can explore what happens when phones are no longer as geographically confined to private spaces. Hopper offers a starting place from which to analyze phone use in public spaces. Together, Goffman and Hopper provide models for understanding the introduction of cellphones into public spaces – specifically, how the technology may influence normative social interaction, as well as how traditional landline phone use may change when phones can be used in more public contexts.

Others have offered insights into the uses and effects of new wireless communication technologies. In his book *Machines that Become Us: The Social Context of Personal Communication Technology* (2003), James Katz and others explore the relationship between personal communication technology and social control, suggesting that there is a complex interplay between fashion, the body, social groups and such technology (see also Katz and Aakhus, 2002). Katz argues that the fear of technology taking over society is ultimately misplaced and such beliefs neglect the human agency involved in using personal communication technologies. In addition, Mizuko Ito's research on Japanese youth and mobile technologies has broadened and deepened our understanding of the cultural and social uses of mobile phones. She has discussed mobile technology as it relates to fashion, liberation from parental control and social organization for Japanese teenagers (2003a, 2003b). As a cultural anthropologist, Ito's ethnographic methodological approach helps to contextualize her findings within Japanese youth culture.

METHOD

Over a year-long project (2002–3), I conducted observational fieldwork and interviews to try to understand how people use cellphones in public spaces. The observations and interviews mainly took place in restaurants, cafés, theaters, bars, parks, libraries, student centers, airports, train stations and on trains and on the street. Field observations were conducted on average twice a week for one to three hours over the course of the year. These were conducted mostly in Philadelphia, New York City and Raleigh, NC. The day of week and time of day was altered so as to get a more representative

sample. In addition to these field sessions, shorter observations were conducted in targeted areas. People were observed just outside of places where cellphone use is socially prohibited, such as theaters or lecture halls. In these cases, people were observed sometimes before the event, during intermission or as they exited the building. Throughout the project, such instances would be observed three to four times a month in addition to the longer field sessions. Typically these observation sessions did not last longer than 15 minutes at a time. Further, people were observed in areas of high mobility, such as airports, train stations and on trains and on the street. These observations occurred two to three times a month and lasted between 15 minutes and three hours at a time. In these contexts, often it would be possible to observe subjects only for a few moments before they hurried on their way through the airports or train stations. In the other environments, such as cafes or libraries, it was possible to observe the same people for longer periods of time, although seldom longer than an hour. Over the course of the study, observation was conducted and field notes made on approximately 500 subjects using and responding to cellphones.

In addition to observations, interviews were conducted in order to check the responses of the interviewees against the observations and to try to understand how people make decisions about cellphone usage in public spaces. A convenience sample of 12 participants was recruited from an undergraduate communications course at a large northeastern university. The undergraduate students were all given extra credit in their class for their participation in the study. Additionally, six participants were approached in a train station or outside a coffee shop. These six interview subjects ranged in age from approximately 25 to 60. (Photos were used also to explain the findings. See the Appendix for a discussion of the use of photographs in this study.)

Cross talk

Goffman's (1963, 1971) extensive work regarding the social landscape and normative behavior in public spaces is helpful in understanding how and why people use cellphones in public. According to Goffman, there are two types of individuals in public spaces: people who are alone and people who are with other people. 'Singles' and 'Withs', as Goffman calls them, are treated and thought of differently by others in public. For example, Singles are much more vulnerable to contact from others and may be judged more harshly than Withs. Goffman suggests that in the worst case scenario, Singles may be seen as having something wrong with them for not being able to be in a With – potentially seen as not having friends nor being sociable.

People compensate for being alone and feeling vulnerable in these situations by using self-defense mechanisms to justify their singular presence in public spaces. 'Singles, more than those who are accompanied, make an

effort to externalize a legitimate purpose and character, that is, render proper facts about themselves easily readable through what can be gleaned by looking at them,' (Goffman, 1963: 21). For example, Singles may read a newspaper, drink a cup of coffee or otherwise seem occupied in order to avoid being approached or appearing as if they do not have any business being in the public place. In this way, such acts not only legitimize their presence but can also act as involvement shields against intrusion from others.

Occasionally, however, a With may be left alone while their partner uses the bathroom or leaves to do something else for a moment. In these situations, the With may seem to be alone. This opens the individual up to being susceptible to a Single's vulnerabilities. In this case, a defensive measure would be to counter any approach by saying, 'I'm with someone' (Goffman, 1963: 23). Another instance when a With might feel socially vulnerable is when their partner participates in what Goffman refers to as 'cross talk'. This is a conversation where 'one member of a With momentarily sustains exclusive talk with someone who is not in the With' (p. 25). This may result in the other person in the With feeling awkward and exposed.

As a result of cross talk, the With not engaged in conversations has a couple of options to avoid feeling awkward. He can try to occupy himself by looking at a menu or eating dinner. According to Goffman, in the latter case the individual's secondary activity is a defense mechanism against social vulnerabilities. If one thinks of a ringing cellphone within a dyad as analogous to a third person intruding on a With, cross talk becomes a useful concept with which to explore cellphone use in public spaces and its effects on interpersonal relationships.

Using cross talk as a model, this article examines cellphone use from two main perspectives: (1) how people conform to familiar rules of social interaction in US public spaces; and (2) how people break rules of social interaction in public space. Two people are engaging in an exclusive interaction when an outsider interrupts the interaction to engage one of the persons in exclusive conversation. As opposed to a third person physically approaching a With, a ringing cellphone indicates a third person intruding upon a With. Rather than physically approaching the dyad, a cellphone call to a person engaged in a face-to-face interaction may lead to social anxiety on the part of the person left out of the phone interaction. During this stage people engage in a number of self-defense mechanisms to alleviate the anxiety and vulnerability of suddenly becoming a Single and feeling left out.

An important deviation from face-to-face cross talk first occurs when the phone rings and the owner must decide how to handle it. This negotiation will be discussed at length later as it relates to social relations and power.

Responses to cellphone calls

Throughout the observations it was noted how people respond to their partners receiving cellphones calls. If the person did answer the cellphone and engage in a new exclusive interaction, the former With often exhibited some anxiety or annoyance at becoming a 'Single'. It was possible to observe new Singles engaging in a number of activities to alleviate some of the vulnerability and unease (see Figures 1 and 2 for examples). These

• Figure 1   Sitting at an outdoor café, the person on the right talks on his cellphone while the person on the left looks around at the people walking by

• Figure 2   While waiting at the train station, the person on the left talks on her cellphone. The person on the right drinks her coffee and looks around

include reading a menu or a book, drinking their water or coffee, eating their food, looking out the window, studying the scrabble board, looking at other people and playing with their own cellphones. Although people sometimes played with their own cellphones, people rarely made a call. Most often they seem to be checking to see if their phone is on or off, or checking their messages. However, three respondents indicated that they would make a cellphone call themselves if their friend was on the phone for a while. 'If it's a long conversation I'll call somebody or find someone else to talk to. But I'd feel kinda silly just standing around' (Subject 14).

People often feel awkward when their former partner is engaged in an exclusive interaction. As a result, people often engage in activities to bide their time until their partner gets off the phone. This behavior is illustrated in Figures 3 and 4 where the person on the phone talked for so long that her former partner eventually got up and went over to other people she knew. In Figure 3 the girl on the left is talking on her cellphone while the girl on the right is looking out the window. In this situation, the person on the right is still engaging in an alternate activity (looking out the window) while waiting for her friend. In Figure 4, taken a few minutes later, the girl on the right has left to talk to others nearby while the girl on the left has not seemed to move much.

This kind of behavior can be seen also when people are walking together. When two people were observed walking together with one of them on the phone, most of the time the non–caller walked slightly ahead as though

• Figure 3   At a café doing work, the person on the left talks on her cellphone while the woman on her right stars out the window

• Figure 4   After a few minutes, the woman on the right gets up and leaves without the
cellphone talker taking much notice

leading the two. The person on the phone also often had his or her head
tilted down as if trying to create privacy (see Figure 5).

Goffman identifies these actions as defense mechanisms against social
vulnerabilities; however, there seems to be an additional reason why
someone would engage in these activities. A person might want to help
create a 'private space' in which his partner can have a conversation. By
engaging in distracting activities such as reading a menu, it gives the

• Figure 5   The woman on the right walks slightly behind and chats on her cellphone with her
head down. Her friend on the left walks ahead as they make their way through the
train station.

impression that one is not eavesdropping on the cellphone conversation. This also relates to Goffman's (1963) term 'civil inattention' which refers to how middle-class Americans maintain order and avoid socially inappropriate interactions with others in public spaces.

Listening in

Despite social rules against eavesdropping, observations and interviews indicate that eavesdropping was a fairly common practice among people whose partners were on their cellphone. Several respondents confessed to listening to their friends' cellphone conversations. For example:

> Interviewer: If your friend got a call and she talked to the person, what do you do when she's on the call?
> S12: I listen intently to see what they're talking about. [laughs] Um, I don't know. It's kinda an awkward situation. You're just kinda like there and you're not really sure if you're supposed to be listening or not. But I mean, I guess it if were my friend, I would listen and if it weren't my friend, I would still listen out of curiosity [laughs] but pretend that I'm not listening.

By pretending that she is not listening, the respondent is acknowledging the social norms of privacy and civil inattention. Somewhere we are taught that we are not supposed to listen to conversations in which we are not participating.

People are more likely to listen openly if they know both people on the call or if the conversation is about them. During the observations, people were seen actively listening to their partner's conversation when their partner was talking about them or what the two were doing. Some respondents openly admit listening to their friends if they know the person on the other end. This is illustrated in Figure 6. The man on the phone was talking about where they were and what they were doing. This gives the man sitting next to him liberty to listen openly to the call. As with listening to a call from friends, when one is connected to the conversation (either by topic or social relations) it grants the freedom to listen. In the field, such active listening was contextually dependent and did not occur as often as people not listening or at least pretending not to listen.

Goffman (1971) suggests that when telephone calls interrupt face-to-face interactions, often physical bystanders will feel alienated by the intrusion of the call. Similarly, respondents reported feeling 'annoyed' or 'put off' when their friends' would chat on their cellphones. One respondent was aware that his behavior might be considered rude and made an effort to appease the person physically present:

> Depending on whom I'm talking to, I don't really make eye contact with the person who's there. I think I tend to do that intentionally I guess because in a way it makes it, the call, seem really important and that I'm paying attention

• Figure 6   The man on the left talks on his cellphone about where the two men are and what they are doing as the man on the right conspicuously listens in

to that. Even if it isn't that important, I think that I would probably still not make eye contact with the other person, so they don't think that I'm just blowing them off, chatting away on my phone. (Subject 10)

Sometimes, however, callers engaged both the person on the other end and the person with whom they were at the time. This brings us to a fourth stage of cellphone cross talk which is significantly different from face-to-face cross talk.

Dual front interaction

One of the limitations of interacting over the phone is the lack of visual cues though which people can communicate information. When someone is physically present, one can communicate verbally as well as nonverbally through both aural and visual cues. This allows for potential communication to occur between the caller and partner who are physically present without the person on the other end of the phone knowing of this communication. Several researchers have written about the concept of performing on 'two very different "front stages"' when engaging in mobile phone use in public spaces (Geser, 2002: section 5.2; Palen et al., 2000). As Goffman (1971) suggests, people are subject to expectations both from the person on the phone and the person with them. In some circumstances, managing the expectations of one relationship may be detrimental to the other. As a result, people will often engage in collusive interactions to indicate their constraints to others.

In the field observations, people were seen communicating nonverbally to their physical partners. They communicated both about the cellular interaction that was just occurring as well as their continued interaction from before the call. People communicated frustration with the cellphone call through eye rolling or motioning with their hands for the conversation to hurry up. I saw people hold up their finger as if to indicate 'Hold on, I'll be just a minute on the phone'. The same respondent, who would not make eye contact while on the phone, acknowledged that he also uses nonverbal communication to interact with people while on the phone:

> For example, if my mom calls me and I don't particularly want to talk to her and well, I might roll my eyes to the other person so they know that I'm like, 'Ok, let's get off the phone already.' And in a case like that, it's almost for the same reason that I don't make eye contact before. In this case, I still want to make the other person feel like I'm not blowing them off. (Subject 10)

Sometimes, people will need to communicate with the person that they are physically with because it is pertinent to the phone conversation. For example, in Figure 7 the male needed a pen and paper to write something down. Using iconic illustrators, he communicated his need and his physical parter obliged. She was then engaged in an interaction with him and could actively look at him and listen to his conversation, while the person on the other end did not have to know her presence.

At other times, people communicated about things not related to the phone conversation. Often the person not on the phone communicated verbally and received nonverbal responses back from their partners. For

• Figure 7   Performing on two fronts, the man on the right verbally communicated on his phone while non-verbally communicating to the woman next him that he needed a pen and paper

example, in cafes or restaurants, several people were observed asking their partners if they wanted coffee or dessert and the partners who were on the phone responded with a head nod. This type of communication was frequent because it does not indicate to the person on the other end of the phone that the caller is engaged in any other behavior besides their conversation. Because of the social obligations to both the person on the phone and the person they are physically with, callers have to constantly negotiate their social relations on two fronts. At times, the people on the phone engaged in verbal responses to the person physically present. When this occurred, the caller might apologize for the interruption to the person on the other end of the phone. Occasionally, if the physical interaction required a lot of attention or seemed like it would last a while, the caller asked the person on the other end of the phone to hold on. Upon returning to the phone conversation, the caller almost always apologized. The Single or person not on the phone can communicate both verbally or nonverbally to their partner. However, it was much easier for the caller to communicate nonverbally to their physical partner because it disrupted their cellphone conversation or second performative front much less than verbal communication did.

Three-way interactions
A fifth stage of cellphone cross talk can occur, but is rarer. In this mediated cross talk, the Single can interact with his physical partner *and* the person on the other end of the phone, but interaction is dependent on the cellphone user. In the few instances where this was observed happening, the primary interactional focus was the cellphone conversation with the Single trying to listen to half of the conversation and chime in whenever they could. This type of dependency upon the cellphone user is much like the dependency upon a translator in face-to-face interactions. Although occasionally the person on the other end of the phone might be able to hear their cellphone user's physical partner, this physical partner can almost never hear the person on the other end of the phone. Hence, the physical partner is reliant upon the cellphone user to relay messages back when appropriate.

   Cross talk provides a helpful framework for understanding how people respond to cellphone calls when in social interactions. Several factors may constrain face-to-face cross talk while not affecting cellphone cross talk. First, cellphone crosstalk does not have the geographic or physical requirements of three people in the same place at the same time. Second, a person approaching a dyad can use social cues to determine whether or not to approach. If it looks like the dyad is deep in conversation or perhaps arguing, the third person can decide against interrupting. A person calling someone's cellphone may have little idea what the person is doing at that

moment and certainly has no immediate perceptual information of the situation. Without physical or social constraints, cellphones permit interruptions to social interactions more easily.

Goffman wrote about cross talk in 1963, long before cellphones made their way into the public domain. Yet his observations about social interactions relate so closely to wireless technology use, suggesting that people map their understandings of common social rules and dilemmas onto new technologies. In new contexts people rely on tacit social norms to negotiate their social interactions; however, these new contexts can call for new rules about social acceptability.

Caller hegemony

Robert Hopper (1992) explores how the telephone becomes a site for the contestation of power, suggesting that a defining characteristic of telephone conversation is the asymmetrical relationship between the caller and the answerer on a telephone. First, the caller determines the beginning of the interaction and the answerer must respond. That is, 'the caller *acts*, the answerer must *react*' (1992: 9; emphasis added). Hopper terms this role inequity 'caller hegemony'. This imbalance is indicated also in the openings of calls by the fact that callers know whom they are calling and for what purpose, but when people answer the phone they are, for the most part, unaware who is calling or why. The answerer is required to speak first without knowing who is on the other end. Therefore the caller is the first to recognize who is speaking and typically introduces the topic of conversation. This may include inquiring about the answerer's current activities which, according to Hopper, may infringe the answerer's privacy. For all of these reasons, the caller has more power than the answerer in the relationship. Understanding how this asymmetrical relationship translates to a cellphone interaction, where the call recipient may know who is calling through caller identification (caller ID), can provide insight into broad social relations.

The necessity to answer a ringing phone is one indicator of this asymmetrical relationship to be explored further in this study. Hopper asserts that 'any summoned individual may choose to ignore the [ringing phone] – but this requires rowing against the current' (1992: 57). The social norm is that when a landline phone is ringing, someone will answer it. Even in an extreme situation where someone is involved in a passionate argument with a loved one, Hopper found overwhelmingly that people will answer their telephone. Inevitably, the face–to–face encounter is superceded by the mediated interruption of the summoning telephone. Such evidence of normative telephone use can be helpful in exploring how people respond to cellphones in public spaces.

Of course, telecommunications technology has changed since the advent of the telephone. Supplementary devices such as caller ID and answering machines have changed the way that people use telephony (Hopper, 1992; Katz, 1999; Sarch, 1993; Westmyer et al., 1998). Although Hopper does not discuss caller ID, he does suggest that answering machines can help to shift the power dynamics of a caller–answerer relationship. Answering machines allow answerers to know who is calling and decide when they wish to return the call, or even if they will at all. Callers are aware that this technology is being used. Whether the answerer picks up the phone mid-message or calls the original caller back, the caller is aware that the answerer has the power to determine the course of the call. Voicemail comes as standard on most cellphones.

The literature surrounding caller ID has been concerned primarily with issues of privacy (see Federal Communications Commission, 1998; Katz, 1999). Prior to answering the call, the answerer can see either the name of the caller, the phone number from which they are calling, or 'Caller ID unavailable' if the caller has signed up proactively to have his identification information blocked. Unlike regular telephones, caller ID usually comes as standard and free of charge on cellphones. Although landline phones may offer a caller ID service, typically it is an added expense. In addition, caller ID does not have to be programmed into the cellphone but is a ready feature. Therefore, the call recipient is automatically given caller identification information on their cellphone. Also, some caller ID devices for landline phones are not on the handset itself, but are a completely separate device. Therefore the proximity of the cellphone caller ID information may suggest an additional ease of use which some standard landline caller ID devices cannot offer. Thus, cellphones provide a unique opportunity for understanding how people negotiate the formerly asymmetrical power relations on the phone.

Using Hopper's discussion of caller hegemony, one can identify cellphones as indicators for social hierarchies. Cellphone users can use caller ID as a way to negotiate social relations in public space. Caller ID allows the answerer to disrupt the traditional caller–answerer power dynamic by empowering the answerer with information with which to determine how to handle the social situation. As Goffman noted (1971), people have social responsibilities both to those on the phone and to those physically present. If someone is having a face-to-face conversation with a loved one, caller ID allows the answerer to make a judgment about whether or not to answer the call.

In addition to the caller ID feature on cellphones, the mobility of cellphones also suggests a potential disruption for caller hegemony. Rather than being at home when one's landline phone rings, a person can be anywhere (within reasonable distance to a cell tower), doing anything when

their cellphone rings. The difference in context (home vs public space) may influence the formerly asymmetrical relationship between caller and answerer. The primacy of the phone interaction may not be as strong when one's dominant activity is in a public space. Goffman defines dominant involvement in an activity as that 'involvement whose claims upon an individual the social occasion obliges him to be ready to recognize' (1963: 44). When one is in a public space, the social obligations of the dominant activity may supersede the immediacy of a ringing cellphone. As such, the caller hegemony that Hopper describes for landline phones may not translate to cellphones in this public environment.

Disruption of hegemony

In the field, people were observed responding to their ringing cellphones. There were four categories of responses into which people generally fell. The majority of people looked at the caller ID then answered their cellphones. Others looked at the caller ID and did not answer. Some people just seemed to answer without looking at the caller ID. Some people answered, then looked at the caller ID. For these people, it seemed as though they were rushing to stop the phone from ringing loudly in a relatively quiet area. By opening up the phone or pushing the 'talk' button, people could stop the ringing and then look at the caller ID information to prepare them for the call.

Most respondents who were interviewed indicated that they look at who is calling prior to answering the phone. Some respondents said they would answer the phone regardless of who is calling, while others said that sometimes they will decide whether or not to answer the phone in public based on who is calling. None of the respondents used the word 'screen' when discussing how and when they decide to use their cellphones in public spaces. Nonetheless, respondents indicated they do in fact screen their cellphone calls.

> Interviewer: You mentioned that you sometimes look to see who's calling. Do you always do that?
> Subject 13: Well, it comes up on my phone. It'll just say. I've programmed my phone so the name will come up and so whenever I pick up my phone I'll just see it. I don't *do it* or not do it *intentionally*. You know, I just see it. Which is actually kinda good because if you don't want to talk to the person who's calling, you can just disregard it. Which I do sometimes [laughs].

When caller ID is unavailable, however, most respondents indicated that they would answer the phone.

> Whenever a number comes up that I don't recognize, I always answer it just because I'm always like, 'Oh it could be an emergency or something'. (Subject 4)

> So if it's not a number that I know, I'm usually really tempted to pick it up [laughs]. To see, it just could be anyone then. So I usually pick it up. Cuz I wanna see who it is. Especially if it says, 'unavailable', because then I can't call them back. (Subject 15)

Not knowing who is calling keeps the power dynamics the same as with a traditional telephone. The answerer is at the mercy of the caller.

In addition to understanding how respondents use caller ID, the interviews provided additional insight into how people think about caller ID. When some respondents were asked whether or not they use caller ID, several became defensive and indicated that it just 'comes up' on the phones without them asking for it. Several respondents indicated that they were 'not proud' that they use caller ID. One respondent referred to caller ID as one of the 'finer elements of receiving calls'. These responses indicate an awareness that caller ID somehow changes the interaction. It seemed that respondents were aware that the power dynamic shifts when the answerer can know who is calling prior to answering the phone. It also seemed that respondents thought the traditional power dynamic to be morally correct and that to violate it is to commit a socially improper act.

Several respondents implicitly denounced a proactive use of caller ID, but still indicated that they use it when deciding whether or not to answer. Respondents indicated that if a cellphone call was 'necessary' – necessary being determined by the context and who was calling – then it was acceptable to answer and interrupt the interaction at hand. Most respondents indicated that they would always answer a 'necessary' or 'important' cellphone call. However, if the answerer deemed that the call was 'not an emergency' and could be easily returned at a later time, the respondent indicated little or no guilt about letting the call go to voicemail.

It is not surprising that a disruption of caller hegemony is accompanied sometimes by guilt or shame on the part of the answerer. Of course, this shame can be counterbalanced by the social responsibilities that one has to the immediate environment. In all of these circumstances, people use caller ID on cellphones as a tool to negotiate social responsibilities.

Maintenance of hegemony

Even with caller ID, caller hegemony still exists to some degree – sometimes answerers are still at the mercy of the ringing phone. Several respondents indicated that they do not 'disregard' calls, but that they answer with the intention of telling the person that they will call them back. For example, one respondent indicated that she would see who it is and answer her phone even if she did not want to talk right then. 'If it's my parents or one of my good friends, then I'll pick it up and say, "I'm out, I'll call you back in, like, an hour".' Despite the potential shift in power dynamics, some

answerers still feel the need to answer their phones, regardless of the situation at hand.

Interestingly, although many respondents indicated that they use caller ID, sometimes even to screen calls, their response to someone screening them was quite different. Several respondents said that they themselves had never been screened despite having just admitted that they screen their incoming cellphone calls. Some respondents admitted that they did not think or know of a time when they had been screened, but assumed that it must have happened at some point. When asking respondents about how they feel about being screened, most responded negatively. One respondent equated it to a friend rejecting them. Another indicated that it would be 'rude' and that she would be 'annoyed'. One respondent said she thought that if her friend didn't answer her call, the friend might be angry with her. Several respondents initially had negative responses, but then came around to say, 'Well, I guess everyone does it'. One respondent said, 'I guess that since it's expected, then it doesn't bother me so much'.

One respondent indicated that he does not screen his cellphone calls when he is with other people because he does not want the people he is with to think that he screens *their* calls.

> If I'm with a friend who expects me to answer when they call me, then that friend doesn't get upset when I answer the phone when I'm with them because they'd expect that I would. If they know I'm ignoring calls then it gives them suspicion that when they call me I'm gonna be ignoring their call. (Subject 2)

Respondents are remarkably aware of the power dynamics of their social relations and will negotiate them appropriately. Overall, it was easier for respondents playing the role of answerers to disrupt the caller hegemony in their favor. However, when respondents play the role of caller, they expect the traditional caller–answerer relationship to be maintained.

Besides caller ID, there are other ways in which cellphone use can disrupt caller hegemony. Although in the fieldwork it could not be observed when people had their cellphones switched off, the interview participants indicated that there are some situations where they do switch off their cellphones. Classrooms, cinemas and performance halls, among others, were the spaces mentioned as those where people switch off their cellphones. In such public contexts, the dominant activity supersedes the ringing cellphone. Unlike landlines, cellphones have a power button. While one can turn the 'ringer' off of a landline phone, one cannot turn the power off unless one goes to the trouble of unplugging the telephone. The power button on a cellphone suggests another means of disrupting the traditional asymmetrical relationship between caller and answerer.

Further evidence supports the existence of caller hegemony in cellphone interactions. Contrary to their expectations, Palen et al. (2000) found that incoming cellphone calls from landlines were longer in duration than were outgoing calls to landlines. As an explanation the authors suggested that:

> perhaps it is the case that the mobile phone user has less control over managing incoming calls. Alternatively, because some mobile phone users want to be accessible to certain other people no matter where they are, an awaited call might be of such importance that the phone owner is willing to suspend other activity to devote attention to it. (2000: 4–5)

Although Palen et al. do not mention the term caller hegemony, their findings indicate further support for the imbalance of power between cellphone callers and answerers.

DISCUSSION AND CONCLUSION

Using Goffman's work on behavior in public spaces as a basis for established social norms, this article has examined how cellphone users understand the social relations around cellphone use and how they negotiate these relations in public space. Cellphones allow for communication on multiple fronts simultaneously. However, this does not always happen and people still engage in self-defense mechanisms when feeling socially ostracized.

The use of cellphones in public space also allows researchers to understand better the power dynamics of social relations in face-to-face as well as telephone interactions. Although caller hegemony still exists to some degree, cellphones and new telephonic technologies can disrupt the asymmetry of the traditional caller–answerer relationship. No longer are answerers always at the mercy of callers. People also use cellphones in negotiating their social responsibilities to their partners who are physically present. Expectations about morally correct behavior for face-to-face and mediated interactions can be moderated by cellphone use.

The models for normative social interaction suggested by Hopper and Goffman offer a starting point to understand how cellphones may change social interaction in public spaces. While cellphone use does call for alterations to the cross talk model that Goffman offers, there was still evidence of the vulnerability felt when one is left out of a social interaction. Although there were signs of more active negotiation in the caller–answer relationship, caller hegemony still exists to some degree. As such, caller hegemony may influence the prevalence of cross talk with cellphones.

This study is a small step towards understanding the modifications, innovations and violations of cellphone usage on tacit codes of social interactions. It should be noted that these findings are not generalizable beyond the places and instances observed. Rural or non-eastern US cities may have very different cellphone usage. Also, it was not possible to observe

the same people over a long period of time, therefore it could not be observed how the same people use and react to cellphones in different contexts.

Further research needs to be conducted on the social uses and effects of wireless technologies on both a macro and micro level. This study has explored cellphone usage on a micro–behavioral level, but there is further work to be done. Time diary studies can help us to understand how and when people use cellphones. There is also research to be done examining the difference in content, frequency and uses of cellphone calls and landline telephone calls. Analyzing cross cultural differences can continue to deepen our understanding of how technologies reflect cultural and social norms. For example, researchers are continuing to find differences in usage in Japan, the US and Scandinavian countries (Ito, 2003b; Katz and Aakhus, 2002). Cultures and social norms are reflected in how the technology is appropriated.

Along these lines, further research needs to be done exploring wireless technologies on a macro level. Wireless telecommunication changes are greatly affecting and reflecting the global marketplace. Interesting questions arise regarding the political economy of wireless telecommunication policy and infrastructure. Specifically in the US, regulation and spectrum issues raise interesting questions as to the future of wireless technologies. Although this study does not address it, market and policy influences over the uses and effects of wireless technologies need to be examined further to get a greater understanding of the social, economic and cultural context for these technologies.

Wireless technologies may privatize and publicize, atomize and collectivize. This study suggests that cellphones do privatize and atomize public spaces as cellphone users block out others nearby; however, cellphone users can publicize their private information when they use their cellphones loudly in public. Cellphones may allow for greater mediated contact between persons due to their flexibility and mobility, which in turn may lead to an overall collectivizing function in society. This study indicates that cellphones may have differing functions and effects depending on the context. The mobility of wireless technologies significantly differentiates them from other technologies. Although many of these same issues arise with wireless technologies as with all new technologies, the mobility of wireless technologies suggests a broad context in which to witness its effects. At the same time cellphones are, for the most part, an interpersonal technology. Thus the interplay of micro and macro uses and effects spotlights wireless technology as an important vehicle for exploring social interactions. Only further research can explain how wireless mediating technology can reflect and affect the culture that uses it.

The prevalence of cellphones in society calls for a better understanding of how this technology reflects social relations and processes as well as how it influences them. Using current social interaction theories is helpful, but understanding how usage of cellphones and other mobile devices deviate from current models can generate future models of social interaction. Recognizing and analyzing people's agency in the usage and effects of technology is an important step in understanding our social world. One cannot study new technologies without exploring the social, economic, political and cultural context in which they are situated.

Appendix

Following Carey's (2002) methodological approach, photographs have been used here to illustrate trends which emerged from the data. Because much social interaction is tacit, photographs become rich illustrations of behaviors indicating themes and categories (Becker, 1974). Rather than using photos as data, these images capture representative behaviors and themes which emerged from my observational and interview data. Choosing to use photographs, however, put me in an ethical dilemma concerning subject consent. I chose not to inform people that I was photographing them prior to taking the picture because that would have contaminated the social process I was trying to capture. By informing people prior to taking their picture, they might have become too self-conscious about their cellphone usage to perform the tacit social norms I was trying to capture. Though some would argue the sheer presence of a photographer contaminates social processes (see Gross et al., 1988 for discussion), I tried to capture behavior that demonstrated recurring categorical themes derived from my observational data with the pictures.

Lisa Henderson writes specifically about *Access and Consent in Public Photography* (1988). Following Goffman's work, she suggests that people maintain 'normal appearances' in public spaces. 'The maintenance of normal appearances needn't imply the photographer's concealment of himself or his camera . . . Rather, it means he will be present but of no concern' (1988: 94). As a photographer I never hid my camera nor did I hide the fact that I was taking pictures. Often I would pretend I was a tourist interested in the architecture or the landscape. Other times I would bring a decoy with me to pose next to someone on the cellphone. Because of the nature of the spaces, it was fairly easy to maintain normal appearances. The mobility and anonymity in spaces such as train stations and parks made it easy for me to blend in. As Henderson notes, the mobility of subjects also lowers the barriers to photography:

> The situation is tempered further if the person is mobile, either walking, running or riding a bicycle. Under these circumstances photographers anticipate that people are less likely to notice them, less likely to be sure they

were the ones being photographed and less likely to interrupt their course in any event. (1988: 98)

Given that I am studying mobile phones, this is certainly the case. People were often walking while talking and seemingly oblivious to me and my camera.

But this also raises an interesting question regarding ex-post facto consent. The photographers Henderson interviewed indicated that it is general practice to obtain consent after photographing if consent cannot be obtained prior. Mobile phones raise two interesting challenges to ex-post facto consent. First, is the fact that mobile people are difficult to photograph (especially given the slow aperture speed of my camera). For example, it would also be challenging after taking the photo to try to follow up with someone who is walking away from you. The second and more important challenge to photographing cellphones is that as a researcher I am still subject to the constraining social norms of phone use. That is, you do not interrupt someone when they are on the phone. I did not feel comfortable going up to a subject who was using their cellphone and interrupting them, explaining that I had just taken their photograph for a study on cellphones and were they ok with it. Additionally, as Meyrowitz (1985) would suggest, cellphone users tend to be less aware of their surroundings; therefore, asking someone on their cellphone for their ex-post facto consent could be startling for the subject. In certain circumstances, I could have waited until subjects were finished with their call to approach them and to ask for consent. However, I felt this was unnecessary given the public setting and the innocuous subject matter I was trying to capture (see Gross et al., 1988).

The technology also allowed me certain leeway in trying to capture the photographs. Because I was using a digital camera, I could stand further away from the subjects I was trying to capture on film. I could then go back on the computer and easily reframe, crop and enlarge the image with little to no resolution loss. The image I originally captured with the camera tells a much larger story about the social context and my photographing process. The purpose of the photos, however, is not to demonstrate my research process, but to capture examples of the tacit behavioral trends which emerged from my observations and interviews. As a result, cropping the image to illustrate particular behaviors better informs the audience of the photo how to interpret it (see Figures 8 and 9 for an example of an original photo and how I cropped it).

In this way, the photograph becomes a rhetorical device in the study. Similar to quotes, photographs can serve as both evidence of our research and as rhetorical devices used to make an illustrative point. Both quotes and photos are the best examples of their genres, yet they also do not tell the whole story. They are rhetorical devices that I as a researcher employ to tell

• Figure 8   Original image of outdoor café with decoy and surrounding patrons

• Figure 9   Cropped image

my story and make my point. As digital photography lowers the barriers to use for researchers, such rhetorical and ethical considerations should reflect our ultimate responsibility to our subjects.

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