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The social and cultural consequences of mobile telephony as seen in the Norwegian context

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Abstract

Based on material gathered in Norway, this paper considers the role of four themes in the adoption and use of the mobile telephone. These four issues include safety, micro-coordination, accessibility and the disturbing influence of the device. These four issues have arisen as elements in the public understanding of the mobile telephone in that they are used to characterize the everyday use of the mobile telephone. These issues are examined based on the qualitative and quantitative data that have been gathered over the past decade.

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1 Introduction

If I may take the reader on a small historical detour for a moment, mediated communication has progressed through three broad stages in the last 300 years. These stages have allowed for more and more flexibility in the way that people communicate. The first phase was where the information could proceed at the speed of the person carrying it. Thus, a letter or a verbal message could go only as fast as the horse rider or other conveyance that bore it. This meant that messages of great importance, such as the end of wars, often arrived after unnecessary battles had been fought and people had needlessly died.¹

The next phase separated the message from the messenger in that systems were developed to expedite the transfer of information. Homing pigeons², optical telegraphy³ and pneumatic communication systems are early attempts at this form of mediated communication. The first generally successful form of mediated communication was the telegraph. For the first time the message could move from one station to another quickly, indeed at the speed of light, without relying on good weather, the time of day or the homing instincts of an animal.

From the perspective of coordination, voice telephony, that eventually replaced telegraphy, was far more democratized in that one need not learn a coding system in order to send and receive information and it was accessible in a far greater range of locations. By the middle part of the 1940's half of the homes in the US had a telephone.

At this point I have a personal perspective on the issue of telephony, and more specifically radio based telephony. Not long ago I was looking through some of my Grandfather's papers when I came across a newspaper clipping from *The Denver Post* dated in the late 1920's. The article described a project carried out by Mountain Bell, then the local telephone company in Colorado, that dealt with the provision of radio based telephony to residents of Brush, a small town on the plains of Eastern Colorado. The article stated, with a liberal dose of hyperbole, that this was the first successful trial of radio-based telephony in the world. On the face of it, this was not the case since there had been radio based communication using Marconi's wireless radio for some time previous to this. None-the-less, here was radio-based telephony being applied to the needs of common individuals. The technology was not being used to send messages from ships or in the case of the newly commercialized radio stations; rather it was being applied to the mediation of interaction between private individuals. Indeed this was the ancestor of modern radio based mobile telephony.

My grandfather was an engineer in Mountain Bell and an early radio enthusiast. He participated in this project and thus the archiving of the article among his papers. If I know my grandfather, he was far more excited by the details of the technology than by its impact on the lives of the farmers living in Brush. It was, after all, a way to quickly establish a telephone service without having to go through the laborious process of building the physical telephone lines.

None-the-less, local access to telephony was nothing if not revolutionary for these people living on the edge of the dust bowl. Claude Fischer provides an account of how early

¹ This is the case with the Battle of New Orleans in the War of 1812 in the US.

² Which incidentally served as the first "technology" used by the Reuters news agency.

³ Optical telegraphy is a system of masts placed in the geography at locations that allow one to see a previous and a subsequent station. The masts are fitted with various visual signaling systems (usually movable flaps that can be arranged in patterns). The flaps are used to resend coded information that an operator has visually read from the mast at the previous station. The limitation of this system is that it can only be used during the day-time and in good weather. It also relies on multiple operators interpreting and recoding the information.

telephony had perhaps a more profound impact on rural communities than on more urban locations. He tells how the landline telephone provided, sometimes even using barbed wire fences in lieu of traditional wiring, was used when “calling for help in emergencies, obtaining weather forecasts and crop prices, ordering goods, recruiting temporary labor and so on” (Fischer 1992, 98).

The telephone discussed here was none-the-less a device with a fixed location. If we move the to contemporary Oslo, Norway, one finds another consequence of mobile telephony. As opposed to the relatively functional use of the device as seen in the previous situations, there is a culture of mobile telephony wherein the mobile telephone is used to coordinate peoples’ everyday comings and goings as they themselves are coming and going.

The mobile telephone is being used to chat. It is being used by teens to send text messages of more, but often less import. It is being used to call sick aunts and by parents to organize childrens’ birthday parties. It is being used by lovers to exchange endearments and it is being used by business people to buy and to sell. It is being used to give people last minute directions and to make last minute arrangements. It is being used to delay or rearrange meetings and, sometimes simultaneously, it is bothering others who happen to be within earshot almost to tears. In short, it is being used to spin the web we call the social network. The scene in the street immediately below me is also being played out in other “mobile” cities and countries. Teens in Rome and Seoul, mothers in Jerusalem and The Hague, business people in Tokyo and Helsinki are all using the mobile phone in the course of their everyday lives.

This approach to telephony arose from the use of radio-based communication that was perfected by Marconi.⁴ Mobile telecommunications came into their own in the 1980’s with the development of various standards, including the Nordic Mobile Telecommunication (NMT) standard. This was one of the first international standards in the area of mobile telephony and in Europe was followed by the digital Global Standard for Mobile telephony (GSM), and this again may be replaced by the so called third generation (3G) mobile tele-phones that will allow one access to internet-like services.

In this paper I look into four elements that comprise our understanding of the mobile telephone. These elements – safety, micro-coordination, accessibility and the mobile telephone as a disturbing influence – are the terms in which we have come to understand the device. They are the themes that tend to arise with discussing the technology.

The analysis is a synthesis of various qualitative and quantitative material that has been gathered over the last decade in Norway. In that period we have seen the growth of the mobile telephone in Norway. In 1991 less than 10% of the population owned one where in 2001 this had risen to over 70%. Along with this transition has come the discussion as to the role of the device in our society. This discussion is the focus of the paper.

⁴ Indeed my Grandfather who was an engineer at Mountain Bell Telephone Company participated in some of the first trials with radio based telephony in the 1920’s and 1930’s. The trials focused on providing telephony to remote homes in the prairie of eastern Colorado. The point was not mobility, but rather to avoid the need to establish traditional telephone lines.

2 Themes in the use of mobile telephony

The four general issues that often characterize the discussion of mobile telephony will be discussed below. These themes come up in different ways for different groups. While safety is often an issue that arises in discussions with the elderly, it is also used by teens in their campaigns to win permission to own a mobile telephone. Teens use the mobile telephone to coordinate their everyday lives, but the mobile telephone as a coordinating device really comes into its own among harried parents trying to fit a complex of errands and assignments into an already hectic day. Accessibility is the realm of teens and young adults who use the device to tie together their peer group against the backdrop of a relatively nomadic life. Finally, users and non-users alike comment on the device as a disturbing influence.

2.1 Safety and security

The issues of safety and security are often very near the top of the list when it comes to justifying one's purchase of a mobile telephone. Teens tell their parents that the device will make them more accessible and the elderly see it as a way to ensure the enjoyment of their cottage in the face of potentially serious health conditions. Use of the device in the case of road accidents is also a common theme.

Hans: (father 46): There was the time we saw that accident. I think that the front wheel of a truck had blown-out and the truck had rolled over in the ditch

Interviewer: And was it good to have a mobile telephone?

Hans: Yea, but we didn't use it then since there were others that had come before us. This was on a highway, but there are long distances here and there are few houses to go into and it might be wintertime. The road can be drifted over and you can be stuck. You can say . . . There are some advantages to having one, simply based on safety in places like we live.

These comments indicate that Hans' encounter with an accident prompted him to think of the device. Thus, the impulse to help, and perhaps also in the case that one is injured themselves. There is a sense in which individuals somehow expand their radius of interaction and, perhaps reduce the risk of problems via the adoption of the device.

When looking across the various age groups, one can see that it is decidedly the elderly that feel the device is of use in emergency situations (see figure 1). There is a general sense among those over 60 that this is when the mobile phone comes into its own. The material shows, however, that there is a difference when considering middle aged users. Women in this group are more in agreement with the statement than men. One needs to look at this in the context of the different use patterns for men and women. Middle-aged men have adopted the device to a far greater degree than women. Access to mobile telephones that are subsidized by their employers gives them a type of access that is not enjoyed by women in the same age group. In turn, this has resulted in more active use and use of the device in the juggling of everyday activities. Thus, women seem to see the device only in terms of the security it provides while men do not see this as the only function of the mobile telephone.

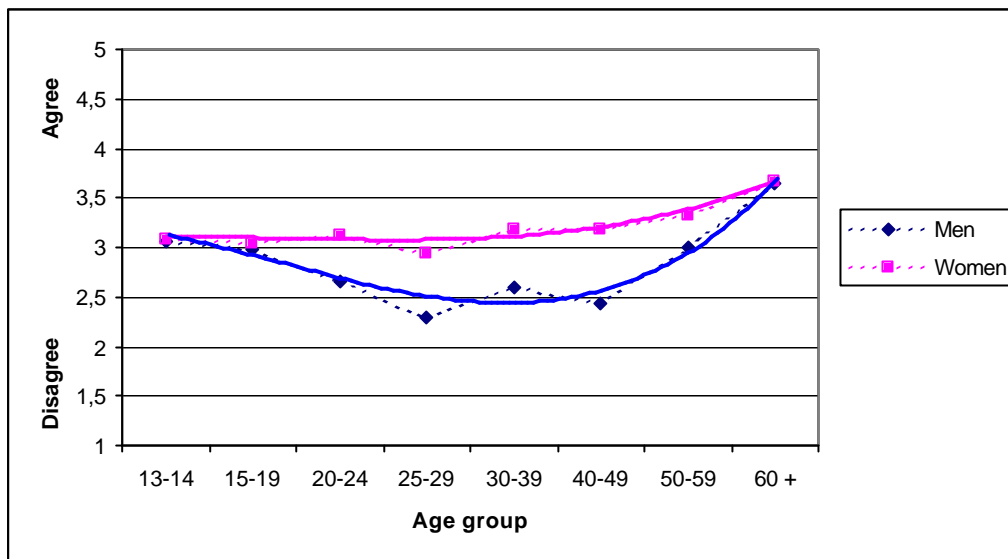


Figure 1 Agreement with the statement "The mobile telephone is most useful in emergency situations" by age and gender for Norway 2001

2.2 Micro-coordination

The next common theme in the discussion of the mobile telephone is that of its role in the coordination of various aspects of everyday life. The ability of the device to provide one with "any time and anywhere" communication is one of the real innovations of the mobile telephone. Indeed, one can suggest that this dimension of mobile telephony is that which will have the greatest social impact.

Unlike previous communications systems where one was bounded to a certain location, one need not be at a specific station or node in the system in order to receive information, nor does one need to know the location of their interlocutor. One needs only to have access to a hand set in order to send or receive messages.

This potential represents a further democratization of the technology. It brings "real time" communication more into the realm of everyday life (Townsend 2000). Thus, mundane everyday tasks and interactions can be carried out more efficiently. This is seen in the comments of the following informant.

Ole Johan: It is very nice to be available when you know that you have kids in the marching band and the soccer team you know. And there are always messages regarding picking-up and driving and not the least with the marching band. There can be driving for picking up things for the flea market and things like that. And it is nice to be available, that you can get messages and such. It is things like that. People plan in the afternoon what they will do and so that they don't start to double book themselves with a lot of things and you come home and find out that there are other things to do because you have not gotten a message and can not plan your free time. Another mother also provides comments along the same lines.

Anne: That is pretty nice if you are away from home and cannot reach somebody via the regular telephone then you can call and leave a [SMS] message. So we use a lot of messages.

Interviewer: What kind of messages do you send?

*Anne: It is if somebody is late, it can be if we need to buy something, if there is something important that he needs to bring home, if he needs to call somebody or if he has been home and has to give me a message. **It is not like 'Hi, I am doing fine, etc.'** It is something that we need. (Emphasis added)*

The important thing to note here is the sense that there is a strong functional aspect to the interaction. Anne notes “It is something that we need” and not simply frivolous interaction. There is a point to the communication and it helps to facilitate one’s daily activities.

This means that in theory the mobile telephone will make the transportation system more flexible and efficient. Rather than coming all the way home before finding out that one needs to take another trip, one can call, or be called, along the way. This was the idea we tested in a diary study of 93 people living in Bærum (Ling and Haddon 2001).⁵ We asked people to fill out a diary for one 24-hour period. Each call, regardless of terminal type⁶ and each trip, regardless of the form of transportation formed an entry. The entries include information on the reason for the call or trip, the time of day, the length, either in distance or time, and other information. In addition we linked the calls to the transportation by asking individuals if the call had caused, changed or saved a trip. Of course there were many calls that were not travel related in any respect.

The specific group was not a random selection of the Norwegian population, but rather it was designed to be other persons who would most likely rely on the mobile telephone as a coordination tool. It was two partner families with children, a car and at least one mobile telephone. In addition, as noted, they lived in a suburban area that is generally more affluent than other portions of Oslo. Thus, the results need to be handled with care. Given this caveat, an analysis of use showed that men used the mobile telephone more often than women in this sample while the opposite was true for the stationary telephone.

Looking at the interaction between the transport and the mobile telephone, respondents were asked if their calls had caused a trip, changed a trip en route or saved the need to travel. The material in Figure 2 shows that more trips were caused by the traditional fixed telephone than the mobile telephone. About the same number of trips were saved with the fixed and the mobile telephone. In addition, not surprisingly, far more trips were changed en route with the mobile telephone than with the fixed telephone.

While one cannot generalize to any degree from the material presented here, the data gives one the sense that the mobile telephone can be seen as a device which allows for the more efficient coordination of everyday life.

⁵ The sample selection was focused on those persons who were the most likely to use the mobile telephone for coordination. Bærum is an upper class suburb of Oslo. Our informants were married dual career couples with younger children and a car in the family. Thus, the results do not necessarily reflect the situation in Norway and have a very limited generalizability.

⁶ I.e. mobile vs. fixed

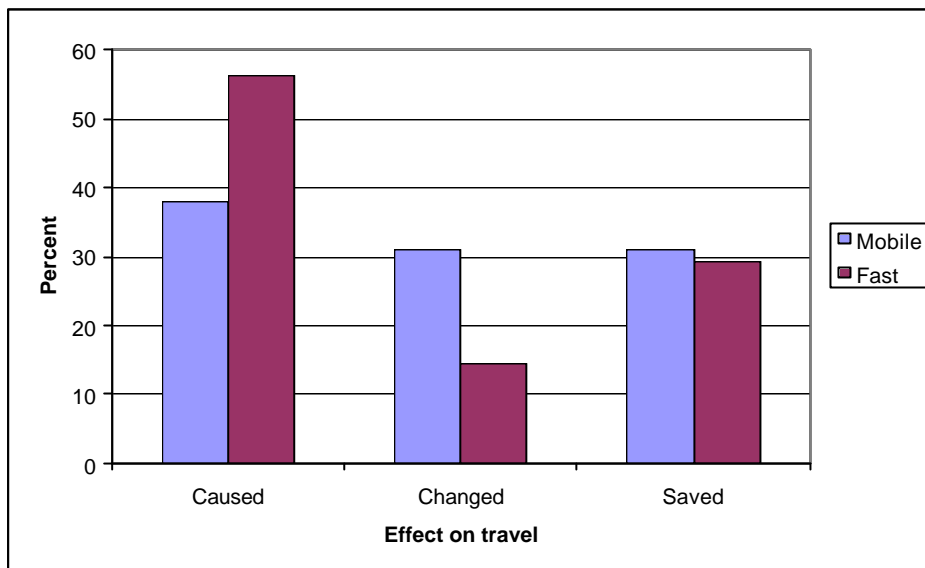


Figure 2 Percent of calls that caused, saved and changed trips by type of telephone call, 2000

2.3 Accessibility

The next dimension that often comes out when discussing the use of the mobile telephone is that of accessibility, that is, one's access to friends. One can see dimensions of this in the citation from 17-year-old Annika.

Annika (17) For example, if you are at a family party and you were going to go to a party afterwards but that party is cancelled and you sit there and say 'What should I do now?' So instead of just sitting there you send text messages to others and eventually you find a place you can go or a party or something. Or sometimes you go someplace and there is nothing happening and you find out that something is happening another place. Where micro coordination

is commonly used for instrumental activities, accessibility is far more expressive in its form. The point is not to necessarily coordinate interactions, but to seek out and to further develop existing social relationships. Analysis shows that accessibility is the realm of teens and young adult users.

To set this into its proper social context one considers that a major dimension of adolescence in modern society is the emancipation of the teen from their parents. Starting during the young teen years and extending through the late teens and even into the early 20's an adolescent slowly moves from the sphere of their family, through a period of high interaction with like-aged peers. (Frønes and Brusdal 2000; Ling and Yttri 2002).

During this period many dimensions of the teens' life are open. One's education, their career, life mates, style of living, argot, hobbies etc. are all open questions. Thus the peer group functions as a type of midwife in this transition from the family of origin to the eventual family of procreation. Seen in this light, accessibility to one's peer group is an essential issue. Technologies such as the mobile telephone in Europe and Asia, and Instant Messaging in the US, constitute a logical medium to facilitate this.

The speed with which the mobile telephone arrived on the scene and filled this vacant social niche can be seen in Table 1. Where only a handful of teens had a mobile telephone in 1997, they were nearly ubiquitous a few years later. It seems that the real transition came in 1998-99 with the rise of pre-paid cards and access to subsidized handsets. This meant that many of the economic barriers to use were eliminated.

The other interesting aspect of Table 1 is the shift in the gender dominance of the mobile telephone. The material from 1997 shows that it is boys who have a clear dominance in ownership. In some cases there is more than a 45% difference in adoption rates. In the 1999 sample there is no real difference but by the 2001 sample it is the girls that are significantly in the lead. The margins are smaller, but the difference is none-the-less significant. This seems to indicate a transition in the general understanding of the device. Where it was a nice gadget to play with it seems to have become a tool for network maintenance.

Table 1: Percent of adolescents who own a mobile telephone by age and gender, Norway 1997, 1999 and 2001

Age	1997		1999		2001	
	Male	Female	Male	Female	Male	Female
13	3	2	35	43	83	80
14	6	1	59	49	82	87
15	17	6	64	73	82	92
16	21	12	73	79	90	96
17	19	4	67	78	89	98
18	30	13	78	68	92	100
19	43	27	81	83	90	98
20	68	20	88	78	86	100
Cases	n = 1000		n = 1006		N = 905	
Chi ²	f (1) = 35.851 sig < 0.001		f (3) = 5.790 sig = 0.12		f (3) = 14.577 sig = 0.002	

Moving now from ownership to use one can see in Figure 3 that the highest levels of use are among the teens and the young adults. Looking first at the use of text messages or SMS it is clear that this is a phenomenon associated with teens. Its peak comes in the 15 – 19 year age group and falls quickly from there. It appears that girls are somewhat more active than boys but this is not a statistically significant difference, at least in terms of the number of messages being sent, or as in the figure, the percent of teens who participate in this activity on a daily basis.

The profile for the use of voice telephony is somewhat similar to that of text messages, at least in the case of girls. It rises quickly from the young teen period to the older teen period and then falls through the rest of the age groups albeit with a much gentler slope. The voice telephone curve for men peaks in the young adult period. This is somewhat later than the similar curve for women. The material here shows that men's use of voice telephony is the most common form of mobile telephony among the middle-aged respondents. This is largely due to the predominance of job subsidized handsets and subscriptions among this group.

This material shows that mobile telephone use in its various forms is most common among the teens and young adults. By way of explanation, this is a nomadic period of life. As noted, the teens are in the process of becoming emancipated from their parents and young adults are, in effect, completing this course. It is a period of life wherein the routines are more open and the daily rhythms are not set in the same degree as in the case of middle-aged persons who often have children, familial responsibilities and more or less entrenched routines.. Thus, the mobile telephone is a perfect tool for managing friendships and coordi-

nating everyday life. However, beyond simple coordination, the device is also useful in spinning the web of social interaction that binds individuals together. It becomes a way to send jokes and various un-important and yet essential messages that allow for one to cement friendships.

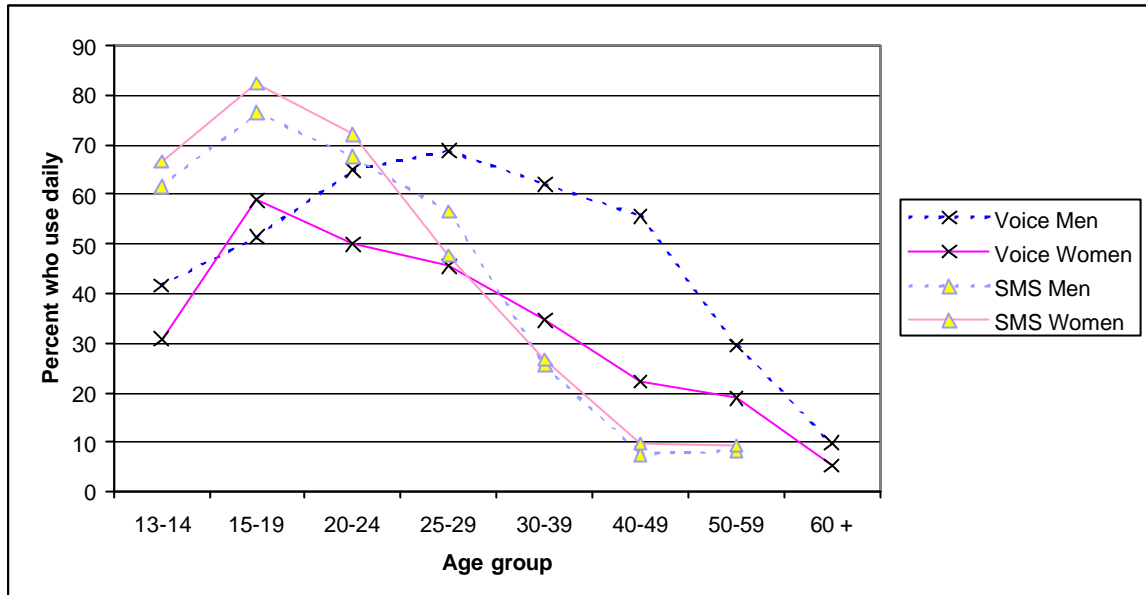


Figure 3 Use of the mobile telephone for voice and text messages on a daily basis, by age and gender, 2001

Seen in this perspective it is not odd that teens and young adults are the most active users of the mobile telephone. In this connection one can ask if this phenomenon is characteristic of a life phase, or if it is something that, once acquired, people will carry with them through their lives. The answer to this may well be a little bit of both cases. On the one hand, teens and young adults can easily see the advantages of access to mobile telephony and will see it as a natural aspect of their lives as they progress through the life phases. However, the intensity of use associated with their emancipation and later re-establishment as adults means that the motivation and impetus for use varies through the different life phases.

In sum, then, the issue of accessibility via the mobile telephone is a phenomenon associated with the special social situation of teens and young adults. It is a type of use that becomes moderated as the individual moves from the young adult phase of life into the more stable (read: routine) period of middle age.

2.4 Disturbing the public sphere

The final dimension of mobile telephony that often arises is the degree to which the mobile telephone is a disturbing influence in the public sphere.

This theme arises in many contexts and, in many respects, is a central gloss when discussing the experience of mobile telephony. The fact that one is confronted with the use of the technology in public spaces evokes visceral responses. One informant commented “*It is awful to see those who go around, I could throw up! They use it even in restaurants, it looks so dumb*” and another noted “*I think it is repulsive to sit there and talk with people on a mobile telephone in a restaurant.*” As one can see, these are not simple abstract discussions of another trend in society. They are intensely felt expressions of disgust for the use of the mobile telephone.

The analysis of this presents one with a complex social issue that touches on many of the taken for granted aspects of everyday life.

The material in table 2 indicates that while there is a general agreement that the use of the mobile telephone is disturbing, the attitude is much stronger among those who do not own a mobile telephone. While about 60% of the owners indicate that the public use of the mobile telephone is disturbing, more than 76% of the non-owners say the same thing. In more qualitative analyses one often finds that users recognize this problem but that they discuss ways in which they try to mitigate the effects of public use. Strategies such as moving

Table 2 Percent of respondents who think that the mobile telephone “disturbs other people” for 9 European countries, December 2000⁷

	Own a mobile	Can borrow regularly	Can borrow occasionally	Have not used a mobile
Mean score	60,24	68,78	69,06	76,56
N	5528	788	181	209

$f(4,6776) = 16.862, sig. < 0,001$

away from others nearby and the use of less trafficked portions of a location are among these strategies. When looking into the comments of non-users, one finds extremely strong negative comments. It is, after all, this group that does not receive any advantages of the mobile tele-

phone but who must make adjustments in their sense of public propriety.

When considering why mobile telephony is disturbing, informants often talk about the fact that mobile telephone conversations are louder than other forms of interaction, that one is, in essence, forced to eavesdrop on other’s interactions and that it is a breach in the normal rules of public interaction (Ling 1997; Ling 2002). Obviously, all of this has not happened without comment. The mobile telephone’s invasion of restaurants, busses, park benches and even public toilets has given new meaning to the concept of eavesdropping. Smith noted in a *Readers Digest* article from 1937 that, “There is no room in the house so private that he cannot crash it by telephone” (Smith cited in Fischer 1992). The mobile telephone extends this lament to the far reaches of civilization, and, as many suggest, beyond. The mobile phone is something new and as such it represents something that we need to get used to, both on the user and the listener side of the equation.

Different persons have varying interpretations of the aesthetic of public space just as we all have different understandings of etiquette and appropriate public behavior. Given the fact that mobile telephony has really only been a public phenomena for a short period of time, one can expect that the routines and understandings for its public management are not yet fully elaborated. However, just as with the traditional telephone, time will provide us with norms of use.

⁷ The data comes from EURESCOM P903. See (Mante-Meier et al. 2001)

3 Conclusion

I have examined four issues that often characterize the discussion surrounding the use of the mobile telephone. These are issues that have arisen from discussions and interviews with users in various situations over the past decade. Safety, micro-coordination, accessibility and the mobile telephone as a disturbing influence describe individuals' understanding of the phenomenon.

Beyond this, one can pose the question as to the broader effect of the device on the social fabric. What is the effect of the device on what Robert Putnam calls the social capital of the society (2000)? One can suggest that the mobile telephone will provide us with the medium through which we can more easily connect with our friends and family – regardless of where we are or what we are doing. It gives one the opportunity to share feelings and experiences spontaneously and thus the sum effect of the device is a more tightly knit society.

An alternative take on this is that the interaction encouraged by devices such as the mobile telephone is simply banal chatter that disturbs others nearby. Other related issues are the degree to which the device leads to a type of “Balkanization” of society in that only like minded persons interact, to the exclusion of the random interactions that might have taken place had one not had this type of access. Another issue is that of a “tragedy of the commons” (Hardin 1968). One can suggest that via the mobile telephone one colonizes a part of the public sphere. By doing this, the individual detracts, if only slightly, from the common bond that one owes others in civil interaction.

With regard to the four elements discussed here, their importance will wax and wane as the mobile telephone becomes more thoroughly embedded in our culture. With time they will become more and more taken for granted and cease to be the source of comment. This means that it is now that we need to attend to them, when the impressions are fresh in our minds. When it comes to the broader social consequences, it is perhaps too early in the life of the mobile telephone to determine this issue. We do, however, need to be mindful of them as we proceed.

The mobile telephone represents a new phase in communication. It allows one to communicate with others regardless of where they are, so long as they have access to the network, they can reach others.

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