

*The Social Shaping of Fixed and Mobile  
Networks: A Historical Comparison*

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The Ancient Greeks dreamt of a device that would enable people to talk over long distances without the need for an interlocutor. They called such a device a 'telephone'.

The idea of direct communication over electric wire was then introduced with the arrival of Morse's Telegraph in 1838.

However, even when Bell finally invented the Electric Speaking Telephone in 1876, it still took some time to find a common use for the device. Even though its invention had been anticipated for a long time, it arrived without a clear and agreed purpose and was received simply as a curiosity.

This monologue presents the history of society's adoption of the fixed-line telephone, and the corresponding adoption of the mobile telephone. It highlights the differences and similarities of these histories, and poses some interesting questions for today's mobile industry.

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## *Introduction*

This document presents a comparison between the social role of the landline telephone from the 1880s till World War II and the mobile telephone nowadays. Two papers analyse the social map of telephone uses in both the early days of the landline telephones and the mobile phone today.

First, we show the similarities and differences concerning the launch and uses of both devices. In both cases the issue of the telephone as a broadcasting service arises. Another topic is who were the early adopters and which were the appropriate uses according to the industry. The considerations of the industry about the right users and uses affect the development of the market. Also presented is the impact of the telephone on the household and work management. In addition to its functionality the telephone and its use presents a “fun” side--it is an “electronic toy”. The comparison also exposes the social skills created by the use of the telephone, the health and social fears associated with the use of the devices, and how telephones are related to the sustaining of community links and social networks.

The interest of the comparison is to give an insight into what happens when new services and new devices enter a marketplace. The evolution of fixed line telephones, the practices of the users, and the attitudes, beliefs and behaviours of the industry can provide valuable information concerning the evolution of mobile telephones and the launch of new services.

# *Chapter 1*

*A Comparison of the Fate of Fixed Line Networks and the Similarities to and Implications for Mobile Networks*

## BROADCAST SERVICES

Since the 1880s, the telephone has been a carrier of point-to-point messages between individuals and a medium of multiple address for public occasions. The telephone companies have broadcast news, concerts or weather reports as a supplementary service offered to their subscribers in order to make the device more attractive. In a few cases private companies were created, such as the Telefon Hirmondó in Budapest, which, like ancestors of the radio, broadcast a whole range of news, lectures, theatre and music to their subscribers. The diffusion of news was also improvised in party lines, collective lines shared by a several homes. The consideration of the telephone as a broadcasting medium coexisted with its use as a conversational instrument since the 1880s, but progressively disappeared before the invention of the radio and therefore without competing with this new medium. The audiences attracted by most of the commercial efforts to broadcast through the telephone were very small. They were mostly from the upper classes, and the content of the programmes transmitted reflected their tastes and interests.

Nowadays, the multimedia possibilities of WAP and 3G mobile phones resume this use of the telephone as a broadcasting tool.

1880-1920	2000
<ul style="list-style-type: none"><li>• Concerts</li><li>• Theatre</li><li>• News</li><li>• Sport</li><li>• Church Services</li><li>• Political Speeches</li><li>• Weather Reports</li><li>• Teleconferences</li><li>• Improvised broadcasting in Party Lines.</li></ul>	<ul style="list-style-type: none"><li>• MP3</li><li>• Radio</li><li>• Access to Websites</li><li>• Sports</li><li>• Chatlines</li></ul>

Questions: Why didn't the broadcasting activity of the telephone succeed?

A better understanding of the failure of broadcast services via fixed line can help in making broadcast services in 3G succeed.

## ***EARLY ADOPTERS AND APPROPRIATE USE***

In the marketing materials of the early landline telephone the emphasis on the practical purposes and the saving of time lasted for half a century. However, the public had already found other uses for the device, mainly as an instrument of conversation and sociability. The industry considered these uses inappropriate; social conversation was “chit-chat” and “idle gossip”. An important lesson from the history of the landline telephone is the power of users to impose their own purposes and competences, and how neglected and marginal users find successful uses, unknown or dismissed before by the experts. Women and sociability, teenagers and SMS are two different examples.

In the case of fixed phones, the passage from the early adopters to a mass market was slower than for mobile telephones. This delay was not due to a lack of public interest. Rather, the industry did not consider the telephone as a mass product. Even if the passage to a mass market was faster for mobile phones, in both cases the industry was surprised by the market’s uptake.

<b>1880-1920</b>	<b>2000</b>
<ul style="list-style-type: none"><li>• Business and professionals were the first targeted market. Their use of the device for work matters was in accordance with the industry views.</li><li>• Farmers’ wives and women use the phone mainly for social conversation and not just for household management. The commercial potential of this use was ignored by the industry for decades.</li><li>• Targeting early adopters handicapped the spread of the telephone.</li></ul>	<ul style="list-style-type: none"><li>• Business and Professionals were the first targeted market. Their use of the device for work matters was in accordance with the industry views.</li><li>• Mostly Teenagers, but not only them, use SMS in a way that the industry had not foreseen</li><li>• Targeting early adopters, could it be a handicap to the development of new services?</li></ul>

Questions: Early adopters have similar culture, interests and knowledge to the engineers and the industry men. That makes it easier to target them. There is a common belief about the diffusion of new uses and habits from the elite to the mass. But in many cases the perception of a product like an elite one, a “yuppie thing”, or a mere business or work related device, it is a handicap to its mass adoption. Would it

make more business sense to target the mass market first, and therefore to gather information about other social groups who are not “like us”?

## **WHERE ARE YOU? HOUSEHOLD AND WORK MANAGEMENT**

As the industry and the early advertising campaigns highlighted it, the telephone introduced changes in the management of work activities. It helped the decentralisation of the office layout, and therefore facilitated the development of corporations and large organisations.

Nowadays the effects of the mobile phone use in work activities are mainly reflected in the case of mobile workers. Telephones also play a role in the management of household activities and personal relationships.

<b>1880-1920</b>	<b>2000</b>
<p><b>Work</b></p> <ul style="list-style-type: none"> <li>• Changes in corporate space: monitoring factories from the office.</li> <li>• A contribution to the organised bureaucracy:               <ul style="list-style-type: none"> <li>-cut the costs, in time, money and effort, of acquiring information and co-ordinating schedules</li> <li>-control of the organisation resources, including the personnel ones.</li> </ul> </li> </ul> <p><b>Home</b></p> <ul style="list-style-type: none"> <li>• Calls between home and work: husband and wife</li> <li>• Management of the household: shopping, invitations.</li> </ul>	<p><b>Work</b></p> <ul style="list-style-type: none"> <li>• Inversion of the relations between the caller and the receiver: Reciprocal monitoring between office and mobile workers.</li> <li>• Mobile calls to the office killing the laptop and the PDA, when workers call their colleagues and secretaries in the office asking for information and documents instead of carrying them.</li> </ul> <p><b>Home</b></p> <ul style="list-style-type: none"> <li>• Calls between home and work</li> <li>• Parents and teenagers: monitoring and resistance</li> </ul>

Questions: What is the contribution of telephones to the productivity?

Is there an increment in the amount of leisure and social activities thanks to the use of mobile telephones?

How can 3G phones affect work and home management? Who manages the relationship between the boss and the mobile workers, the parent and the teenagers? Is it the caller or the receiver? We can find unexpected uses in the office and family relationships due to the mobile phone use.

Mobile phones create new and rich uses and behaviours at home and in the work environment. It is necessary to understand these often contradictory behaviours.

## ***ELECTRONIC TOY***

In the beginning, the telephone was considered a kind of “electrical toy”, presented by Alexander Graham Bell as a new marvel of science. His demonstrations were intended to be demonstrations of utility face-to-face, in order to convince the audience that the device worked and then try to persuade them to pay for it. In 1877 an event of the Sunday School of Old John St. M.E. Church included recitations, singing and an exhibition of “Pr. Bell’s Speaking and Singing Telephone”. When an audience of bishops and priests in Quebec City in 1877 heard a voice singing “Thou are so near and yet so far,” they stood up and sang back into the telephone. These stunts created considerable publicity as newspapers relayed them around the world.

Mobile phones also hold the playful aspect of the early days of the fixed telephone. Their meaning is not only utilitarian and useful, but also emotional and entertaining. They facilitate creative expression, especially in the case of SMS. Mobile phones are a kind of toy object and tool for play, with games, animations, pictures, smileys or rings.

<b>1880-1920</b>	<b>2000</b>
<ul style="list-style-type: none"><li>• Fairs and shows where the telephone is presented as a form of entertainment.</li><li>• Newspapers relayed what happened in the shows giving publicity to the new device</li></ul>	<ul style="list-style-type: none"><li>• High Street: Retail as a place to play?</li><li>• Media publicity about the fun aspects of new devices</li></ul>

Questions: The accent on the playfulness of new technologies helps to make them familiar. It helps the public to learn how to use them, but also has its disadvantages. A device labelled as a toy misses other opportunities.

The interest in the playfulness and fun is different for different groups of users. An appropriate view of the device for each market tells the way of presenting the device.

## HEALTH FEARS

“As civilisation advances new kinds of diseases are produced by novel agencies which are brought to bear on man’s body and mind” reported the *British Medical Journal* in 1889. The fear of health risks derived from telephone use also arose in the early days of its development. Even “strong-minded and able-bodied men” were considered to be susceptible because of the “almost constant strain of the auditory apparatus” in people who uses the telephone very often. The symptoms were nervous excitability, buzzing in the ear, giddiness and neuralgic pains. A certain amount of "moral panic" often follows the introduction of many new technologies. Some of the risks considered are the same in both landline and mobile phones; others are different, following the more feared diseases of each period.

<b>1880-1920</b>	<b>2000</b>
<ul style="list-style-type: none"><li>• Aural overpressure</li><li>• Nervous excitability</li><li>• Insanity</li><li>• Addiction</li><li>• Contagion of infectious diseases</li></ul>	<ul style="list-style-type: none"><li>• Stress, work overpressure</li><li>• Nervous excitability</li><li>• Insanity</li><li>• Addiction</li><li>• Cancer</li></ul>

Questions: The truth is often irrelevant concerning of fears of this kind.

## SOCIAL FEARS

The association between sensational crime and new communication devices is not a new phenomenon. “It’s a well-known fact that no other section of the population avail themselves more readily and speedily of the latest triumph of science than the criminal class” explained Inspector Bonfield to a *Chicago Herald* reporter in 1888. Fears related to the use of the telephone concern not only health, but also social behaviour and social relationships. In the early days of the landline telephone some communities banned the device because the effects of use were perceived as harmful for the social relationships, a source of conflicts. In America, members of some religious groups, such the Amish and the Mennonites, argued over whether the telephone was a theologically acceptable device or an intolerable worldly seduction. The Amish ended up banning the telephone due to the conflicts and disputes originated by eavesdropping in the party lines. The reason was that “if that is the way they are going to be used we would better not have them”.

<b>1880-1920</b>	<b>2000</b>
<ul style="list-style-type: none"> <li>• Decline of traditional forms of interaction like visiting</li> <li>• Loss of interest in taking part in social activities</li> <li>• Inconsiderate behaviour</li> <li>• Obscene calls/anonymity</li> <li>• Crime: easier to commit fraud.</li> <li>• Blur distinctions between:               <ul style="list-style-type: none"> <li>- discrete groups: social classes, gender.</li> <li>- domains and categories</li> <li>- Public into Private: home open to calls from outside, strangers, work matters, etc.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Decline of traditional forms of interaction like face-to-face conversations</li> <li>• Loss of interest in taking part in social activities</li> <li>• Inconsiderate behaviour</li> <li>• Obscene calls/caller ID</li> <li>• Crime: stealing and aggressions.</li> <li>• Blur distinctions between:               <ul style="list-style-type: none"> <li>- discrete groups,</li> <li>- domains and categories: work and home</li> <li>- Public into Private: private conversations in public places.</li> </ul> </li> </ul>

Questions: The idea of mobile telephones making people more secure is counterbalanced by the health and social fears associated with telephones which make their owners more vulnerable. Those fears are not the same for everybody. Different groups do not have the same fears.

Fears associated with the use of the telephone are sometimes actual and sometimes imaginary. Which should be addressed? And how?

## SOCIAL SKILLS

New social skills in professional and private life are originated by the use of the telephone. The introduction of a technological device in everyday life activities requires an adaptation of social rules of interaction. For instance, the use of landline telephones simplified the formalities that ruled face-to-face conversation, e.g. opening sentences, polite forms of address. The telephone also facilitates new ways of organising time and space.

<b>1880-1920</b>	<b>2000</b>
<ul style="list-style-type: none"> <li>• Managing interruptions</li> <li>• Social etiquette:               <ul style="list-style-type: none"> <li>- rules of how to speak properly in the telephone</li> <li>- adequate times to call</li> </ul> </li> <li>• Urban concentration</li> <li>• Expansion of a dimension of social life:               <ul style="list-style-type: none"> <li>- frequent checking-in</li> <li>- rapid updates,</li> <li>- easy scheduling of appointments</li> <li>- quick exchanges of casual confidences</li> <li>- long distance calls</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Managing interruptions, attention and availability</li> <li>• Social etiquette: rules of how to speak properly in the telephone in public places</li> <li>• Rural sprawl</li> <li>• Micromobility: the way in which an artefact can be mobilised and manipulated for various purposes around a relatively circumscribed, or "at hand" domain, for example, inside the office</li> <li>• Micromanagement of time:               <ul style="list-style-type: none"> <li>- phone call is an advanced arrangement, anticipates future meetings and prepares concrete proposals.</li> <li>- increasing flexibility in the use of time: postponing and rearrangement of schedules, meetings and appointments. The exactitude in the measurement of time is no longer necessary to coordinate activities. Punctuality ceases to be the virtue it used to be.</li> </ul> </li> </ul>

Questions: When is a call an interruption? What is currently acceptable mobile phone user's behaviour? If mobile interruptions are a problem, do we have a better solution than simply to switch off the phone? Producing services that support emerging practices increases chances of uptake, therefore these emerging practices need to be better understood.

## COMMUNITY-SOCIAL NETWORKS

Telephones are a tool for collaborative interaction in the local environment, serving to strengthen and renew the membership in a community. They help to strengthen and maintain the relationships of the people who deal with them.

1880-1920	2000
<ul style="list-style-type: none"> <li>• Expansion of the local and extralocal activities</li> <li>• Increasing of local ties</li> <li>• Keep in contact with friends and family</li> <li>• Reducing of loneliness and anxiety</li> <li>• Women: in the early days, women where the main group to use the phone to sustain community links.</li> </ul>	<ul style="list-style-type: none"> <li>• Increasing of the number of contacts with a small number of people</li> <li>• Keep in contact with friends and family</li> <li>• Reducing of loneliness and anxiety</li> <li>• Teenagers: their use of mobile phone is mainly related to friendship and sociability.</li> </ul>

Questions: Is the price of the communication calculated in function of the distance, the reason for the mainly local use of telephones? What are the social consequences of the increasing number of contacts with a few people due to the mobile phone use? Is the amount of activities carried out (leisure, associations, etc) related to the use of mobile phones?

We know little about the emotional affordances of mobile telephones. Such insight can produce more appropriate services. 3G telephones open this issue of communities and social networks to the virtual communities. Until now those were concerned with email addresses and the use of Internet. There is a different perception of telephones and e-mail addresses. 3G will pose the question of the access by strangers to our personal mobile phones.

# *Chapter 2*

*The Social Role of the Telephone: A Literature Review*

## **1 Introduction**

This review discusses some works about the social role of the telephone system and its evolving uses, as well as the methodological approach to studying them. Considering the differences of social contexts and technical devices, the knowledge of early practices, conflicts, fears and hopes about telephones will help us to design research projects about the uses and social roles of mobile telephones.

Most of the authors cited in this paper agree that there are few scholarly studies about this topic. In the early days the media showed the same lack of interest. The period of controversies, polemics and astonishment after the invention of the telephone in 1876 was shorter than that devoted to other technologies. This silence and absence of public debate reflects the quick adoption of the telephone as a taken for granted element of middle-class everyday life in the countries where it was first introduced. When the sociological studies about technical inventions arose in the 30s at the University of Chicago under the influence of William F. Ogburn, the telephone was already an old communication technology, lacking the excitement of radio and cinema.

Before presenting the uses and social consequences of the introduction of landline telephones, some theoretical and methodological considerations will be briefly discussed.

### **1.1 A non-deterministic approach**

The term "social role" is preferred to that of "social impact". The latter is a misleading metaphor, which indicates that technology (the telephone in this case) is exterior to the society and has an effect upon it. It is as if the technological change came as a part of an autonomous scientific development, and the applications and uses of a device followed an internal technological logic. Such perspective implies the existence of a causal link between technology and social actions. However, technological devices and their systems of uses are part of the material culture of a society. The telephone and other prosaic objects of our culture are at the same time the instruments with which and the conditions within which we enact some of the most profound conduct of our lives: dealing with others, family, friends and strangers, and with ourselves. This doesn't mean that there is a causal link in the opposite way, from society to technology. The approaches which consider technology as a symptom or an expression of a culture imply that modern technology forms a whole, consistent and coherent system, whose effects are the same for all devices and for all people.

The study of the role of technology from the user's viewpoint (Fischer, 1992) emphasises the human agency and intentionality among end users. The emphasis on the user, the social aims and the social contexts denies any kind of determinism. The users have purposes, manipulate, understand and tell about ends and means. Those purposes are culturally conditioned. The social, cultural and technical conditions limit people's choices. Some of those constraints are the income, costs, information, skills, formal and informal rules and the distribution system of the technology. From this perspective the consequences of technology are the ends that users pursue. This is not a simple issue. Not only different groups have different purposes, but the same people have multiple and contradictory goals. Moreover, individual choices could have

unintended consequences, and there can be unintended collective consequences of others' use. Technological devices are tools and structures that constrain the individual. The effects of the telephone follow opposite directions, once considered purposive behaviour, a more complex logic than mere causality is needed. De Sola Pool regards the telephone as a "facilitating" device. It allows, not determines, myriad uses for myriad people, and since societies are neither unified nor consistent, the telephone often contributes simultaneously to opposite developments (De Sola Pool, 1977: 302), as the concentration and the dispersion in urban settlements, or being used to commit crimes and to improve police surveillance.

"At either level of analysis, individual or structural, the centre of the process is the purposeful user employing, rejecting, or modifying technologies to his or her ends, but doing so within circumstances that may in some instances be so constraining as to leave little choice at all" (Fischer, 1992: 19)

## **1.2 Social meaning of technology**

Technological change is characterised by its indeterminacy. It results from the struggles and negotiations among interested parties: inventors, producers, different users, and governments. Technological devices such as the telephone are "fodder for social experimentation" (Marvin, 1988: 3). Therefore, the history of the social role of the telephone is less the technical evolution of the telephone system than a series of arenas for negotiating issues crucial to the conduct of social life: who is outside and inside, who may speak and who may not, who has the authority and may be believed. The focus is shifted from the instrument to the drama in which objects and existing groups, such as classes, families, professional and ethnic communities negotiate power, authority, representation and knowledge with the resources available. New devices introduce new platforms on which old groups, with their competing logics of experience, confront one another. Old habits of exchanging between groups are projected on new technologies that alter, or appear to alter, social distances. The new devices force the revision of old practices and therefore the group's habits are reformed. In the case of the telephone, expectations about its effects on the boundaries between intimacy and strangeness and on the nature of social bounds express the fears and hopes regarding other groups.

"New practices do not so much flow directly from technologies that inspire them as they are improvised out of old practices that no longer work in new settings.... New kinds of encounters collided with old ways of determining trust and reliability, and with old notions about the world and one's place in it: about the relation of men and women, rich and poor, black and white, European and non-European, experts<sup>1</sup> and publics." (Marvin, 1988: 5).

The telephone, like other technological objects, is not a fixed natural object. It hasn't natural edges. Its use is a constructed complex of habits, beliefs and procedures embedded in elaborate cultural codes of communication. The uses are the result of how people projected their respective social worlds onto technologies and what are their justifications and fears. Marvin (1988: 234) proposes a framework of structuring the social meaning of electricity, which is also useful for the understanding of the

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<sup>1</sup> The word 'expert' used by Marvin refers to the industry men and the engineers.

social meaning of the telephone. This framework includes three elements. First, the **body**, regardless of the preferred literate habits of scientific thought. The body is the centre of human experience and the most familiar of the communication modes. It constitutes the touchstone to gauge, explore and interpret the unfamiliar, the critical juncture between nature and culture. Second, the immediate community, family, professional groups, gender, race and class. This involves the ways of estimating trustworthiness, the strategies of deception and face saving and the alteration of real or perceived social distances. Third, the unfamiliar community, that is, the organisation of the world outside the groups to which one belongs.

The **imagination** in all its forms, from fantasies and dreams to the art forms like literary works, helps us to understand the social meanings of technologies and what “consciousness” is in a particular age, which thoughts are possible and which thoughts cannot be entertained yet or any more. Dreams and fantasies created, exchanged and reworked in public are systematic. They have their own tradition. There are never pure individual fantasies. Their point of departure is the perceived reality and the conditions in which people live and understand the world.

### **1.3 Telephone and modernity**

Most of the studies about the technologies of industrial societies are concerned with their role in the building of the modernity features; that is, in the weakening of local ties and community links, the extension of individualism and impersonal relations, the growth of urban areas and the decline of rural life. Often the link between technology and modernity is studied as a form of social determinism. As technologies like the telephone are invented and used in modern societies, the effects of their uses should reinforce the feats of the modernisation process. However, this affirmation needs to be empirically proved. Regarding the above, it will be discussed:

- how did people adopt and adapt the expansion of personal communication due to the telephone in relation to the dynamics of modern societies.
- whether the telephone has expanded or diminished personal relations. Is the decline of community bounds linked to the spread of the use of the telephone?.
- which are the subjective implications of this device and what has been its role in the division between privacy and the public sphere. The telephone is the first electric medium to enter the home and unsettle customary ways of dividing private and public spaces, family and community.
- what the progressive widespread use of the telephone means for others and for the society.

According to Fischer (1992: 28), we can only understand what role the telephone played in modernisation by understanding its uses, knowing who adopted the telephone, when, where, how and why, for what purposes, for what uses, and by the constraints generated by the common use of the device.

## **2 Plurality of uses**

The idea and the word "telephone" existed fairly widely before its creation in 1876. Since the ancient Greeks, people in different periods have dreamed of talking tubes or other forms of talking at distance, without the presence of an interlocutor. The idea of

conveying the human voice at any distance over metallic wires was reinforced since the invention and spread of the telegraph. But once the telephone was invented it took people a while to find a utility for the device. It was a curiosity, an invention long desired but without a universally agreed purpose (Young, 1991: VIII, 1-2). The difficulties of the inventors to find a buyer for the patent reflect this situation (Aronson, 1977: 15).

## **2.1. The Pleasure telephone**

In the beginning, the telephone was considered a kind of “electrical toy”, presented by Alexander Graham Bell in shows as a new marvel of science. These shows were intended to be demonstrations of utility face-to-face, in order to convince the audience that the device worked and then to try to persuade them to pay for it. Those demonstrations involved the broadcasting of music, theatre, and information. At the end of the 19<sup>th</sup> century the telephone was a carrier of point-to-point messages to individuals, and a medium of multiple address for public occasions: concerts, theatre, sports, church services and political campaigns. This use as a means of entertainment and broadcasting of news was one of the main uses of the device till the end of the 19<sup>th</sup> century. The broadcasting of news was both professional and improvised. Telephone companies transmitted weather reports and even informed their subscribers of the entry of the United States into the war against Spain in Cuba in 1898. Also, people who shared the same line, called party lines, exchanged and asked for news, or maybe more often just eavesdropped in order to be up to date with the current issues (Marvin, 1988: 222). The use of telephone as an entertainment form also involved teleconferences for clubs and associations (*Ibid.*: 212-213)

This consideration of the telephone as a broadcasting medium coexisted with its use as a conversational instrument in the 19th century, and progressively disappeared afterwards. It is remembered even when this use is just an anecdote of the past. This use is mentioned in books like *The Story of Broadcasting* by A. R. Burrows (1924). The broadcasting of news, music, drama, religious services, or lessons was done in some cases in a more systematic way, not just in occasional shows and demonstrations, but as kind of proto-radio. That was the case on the Telephon Hirmondó in Hungary, which existed from 1893 till World War I. The subscribers received a full schedule of political, economic and sport news, as well as plays, lectures and concerts (Marvin, 1988: 223-231; Briggs, 1977: 40-65). In the USA a similar example was the Telephone Herald of Newark (Marvin, 1988:228-230)

## **2.2. A business tool**

The telephone descended from a "parent" technology, the telegraph. Its makers, businessmen and marketing policies were at the beginning the same ones as the telegraph. This inheritance shaped its early history. The first use as a conversational device was a substitute for private telegraph lines. In this case the telephone was used just between two points, usually the home and the business place. We go from the one-way process of the broadcasting use to a restricted one-to-one dialogue. It started as an expensive device favoured by the upper classes, as is often the case with new technologies, and then grew popular with farmers in the United States, and urban middle classes. For the first decades of the telephone's existence it was a businessmen's monopoly. It substituted for the telegraph inside the commercial and

professional communities. Used according to practical requirements, it's a contribution to the organised bureaucracy. It creates productive traffic (Cherry, 1977: 114), increases productivity, by cutting the costs of acquiring information and co-ordinating schedules, and facilitates the control of the organisation resources, including the personnel ones.

Telephone is a key element in the building of corporate empires. Apart from easing the violation of laws and the realisation of exchanges without leaving traces (Aronson, 1977: 32), it permits the physical separation of the offices from the factories, allowing the managers to keep the control of the production. Therefore, the telephone plays a role in the urban concentration of financial and business activities. It is also a central element in the work organisation and communication inside the skyscrapers, the symbols of corporate capitalism that arose at the beginning of the 20th century.

### **2.3 The telephone shouldn't be for the masses**

In the marketing discourses the emphasis in the practical purposes and in the saving of time lasts for half a century, even if the public had already found other uses for the device, mainly as an instrument of conversation and sociability. Fischer demonstrates how the industry men of the early days had a misperception of telephone users (Fischer, 1992: 60, 62, 78, 85). From the beginning, the marketing campaigns were aimed to educate the public. They had to suggest purposes, instruct people on how to use the telephone, provide new etiquette rules and nurture goodwill to the industry. Nevertheless the late introduction of sociability as a marketing point didn't mean that it didn't exist before. The experts, the industry men, considered these uses inappropriate. Fischer (1992: 81) explains this fact in relation to the inheritance from the telegraph. Those former telegraph men considered its use for social conversation an abuse or a trivialization of the service. It was considered "chit-chat" and "idle gossip". Inside and outside the industry many people considered idle conversations an inappropriate invasion of the household. There were also worries about inappropriate contacts between men and women of different classes and about the lost of privacy.

The dismissing of women as incompetent users was also extended to black people, immigrants and farmers. These considerations, expressed for example in technical journals and the electrical press, as Marvin (1988: 17-32) shows, are part of the invention of the expert and the stigmatisation of the unempowered. They didn't derive from the use of the device, but from the existing relationships and perceptions of the different social groups. They distinguish the outsiders and the insiders of the technological world. The example of this distorted perception of the uses of a technological device, by those who produce it, shows that the promoters of a technology do not necessarily know or decide its final uses. The consumers develop new uses and ultimately decide which will predominate. These vendors and marketers are constrained not only by technical and economic attributes but also by an interpretation of its uses that is shaped by their histories. The industry men are as deeply involved in the realm of cultural production as in the technical one.

"Technologists are not solely members of professional groups; they are social actors with a variety of loyalties that may not always be perfectly congruent with professional goals. Even their professional roles cannot be fully understood without

attention to their efforts and aspirations as members of families, citizens of countries, and possessors of gender and race” (Marvin, 1988:232).

The pioneer telephone men were “a self-conscious class of technical experts seeking public acknowledgement, legitimation and reward in the pursuit of their task”. The effort to invent themselves as an elite, to command high social status and power was focused on technological literacy, on special symbolic skills as experts. They had to distinguish themselves from mechanics and tinkerers, and from the enthusiastic but electrically illiterate public, by elevating the theoretical over the practical, the textual over the manual, science over craft (Marvin, 1988: 61). One of the consequences of this fact, surprisingly today, is that the industry men didn’t consider the telephone a product for a mass distribution during at least the first 50 years of its existence. Fischer explains the conservative view of telephone use manifested by the industry in the early days in reason of the inheritance of the telegraph. The arrival of new managers without those links facilitates the change in the marketing strategies. A learning period of both experts and the publics was necessary in order to develop new uses. Marvin asserts that the early uses and marketing strategies of technological innovations are essentially conservative because their capacity to create social disequilibrium is intuitively recognised.

Those fears were manifested in the belief that the telephone could be a source of bodily distress and unbalance. The body is the first frame to make sense of new experiences. Early users of the phone were worried about "aural over-pressure", nervous excitability, euphoria, neuralgic pains and even insanity due to the constant ringing, as a result of an excessive use of the device (Marvin, 1988: 132). In those days people also feared the contagion of infectious diseases, either by the wires carrying virus, germs and bacteria or by using the same device as ill people. For example, in 1885 rumours spread in Montreal about the epidemic of smallpox being carried by people's breath through the phone (Young, 1991: 34)

The will to distinguish themselves from the other groups and to maintain social distances and privileges was an obstacle to the commercial goal of extending the use of the telephone, which success precisely resides in the number of subscribers, in the possibility to communicate with others. Being an element of social distinction in the early days, explains the opposition, not only by the experts but also by the first subscribers, against a mass diffusion of the phone and the expansion of public phones (Marvin, 1988: 102).

The marketing campaigns and the geographical offer of services weren't the only effects of the industry men's conceptions about the phone. The companies regulated its accessibility and its uses. They dictated who could use it and what issues were appropriate to talk about. Even in the case of emergencies there was no general agreement about whether popular channels of communication such as the telephone could be relied upon for reporting emergencies (Marvin, 1988: 103). In the 19<sup>th</sup> century the Bell Telephone Company removed the phones of those who allowed nonsubscribers or “deadheads” to use their phones. Marvin (1988: 104) quoted some cases of customers who sued the company for that. The ownership of the device, and the last word on who decided who could call, were matters of conflict in the early days. Etiquette on the phone was also a concern for the industry men. Phone conversations revealed in the early days a relaxation in the common courtesy of

speech, which was a class-based reference. The recommended good manners were those of middle-class intimacy: quiet voices, clearly enunciated words, dignified presentation. The importance and the anxieties about how to speak properly on the phone and what community of speakers was addressed in the reach of its wires can be seen in the example of the Ohio telephone company, quoted by Marvin (1988: 89), which removed the telephones from subscribers who used improper or vulgar language.

The telephone offers the possibility of mixing heterogeneous social worlds. That is at the same time a useful opportunity and a dreadful threat of intrusion. The phone embedded the social risk of permitting outsiders to cross boundaries of race, gender and class without penalty. In this way it altered the customary orders of secrecy and publicity, as well as the customary proprieties of address and interaction. Well-insulated communities of pre-telephone days could not remain forever untouched by these developments, nor were telephone companies able to ensure that emerging telephone communities would remain within the limits of social decorum and work-related use (Marvin, 1988:107). For instance, the anonymity of the telephone facilitated courtship beyond parental control, promoted infidelity but also helped to track down the adulterous. It fed the sexual fantasies (in the early days many of those concerned the mainly female operators). The most disturbing assault in social distance exploited telephone anonymity, abusive and obscene calls having existed since the early times (Marvin, 1988: 88; Katz, 1999: 231-278).

Marvin also highlights that the most admired feats of the telephone, the wonderful ability to extend messages effortlessly and instantaneously across time and space, reproduced without loss of content, wasn't linked to a genuine sense of cultural encounter and exchange. Those who controlled the new technology, as most of the Western white middle and upper classes at that time, dismissed different cultures as being deficient by civilised standards, and even unable to communicate meaningfully, in a clear example of "cognitive imperialism".

"Any device that enlarges one's environment and make the rest of the world one's neighbours is an efficient mechanical missionary of civilisations and helps to save the world from insularity where barbarism hides" (Amos Dolbear, telephone inventor quoted by Marvin, 1988: 192).

If we look at the American case, as it is described in the Fischer's book, the fact that income determined whether the urban American subscribed to telephone as strongly at the beginning as 40 years later is highly surprising. The stagnation of the diffusion of the telephone down the class system contrasts with that of the automobile. Even if we consider that phones are a less exciting purchase, we should also consider that it was much less cost-effective. We cannot understand this stagnation without the scepticism of the industry about farmers, working class, ethnic minorities and migrants. The attitude of the industry was not only reflected in the marketing strategies, but also in the quality of the service provided and in the accessibility to the phone. Rural areas or the Southern states were long forgotten in the building of new wire systems and exchanges. However, even if telephone was targeted for the urban North originally, telephones diffused most rapidly in the Midwest and West. Farmers were more likely to subscribe than city-dwellers, at least in the first two decades of the century. The reason for the American farmers' interest in the new device was their

isolation. However, many subsequently gave up their telephones. The explanation provided by Fischer is that other technologies, such as the automobile, better fulfilled their needs to break their isolation, due to the poor telephone service they were offered. Although the industry was not effective in creating needs and shaping use, it did set the structure within which consumers could exercise choice. As one of the Bell Canada managers quoted by Fischer said in 1902: "Of the 60,000 people in the city not more than 1200 have or require telephones.... Telephone service is not universal in its character and should not be supported by tax money". This claim reveals Bell leaders' sincere conviction throughout the era from the telephone's invention to 1940 that the telephone was not for the masses, (Fischer, 1992: 107-108, 120). The Bell monopoly just accentuates this fact.

The American Government also provided a structure that limited consumer choice. It guaranteed local monopolies and did not subsidise lower-income users, as it did for the automobile. It left such potential telephone users with higher costs than comparable users in European countries. However, the role of the state slowed the introduction of the telephone in such countries as France or Great Britain. In the French case, the telephone early became a public monopoly. It was looked upon as only interesting for public administrative uses, for the army, and only secondarily for industries and businesses in a political context of strong centralisation, where communication was viewed as a "monologue of the state with its citizens" (Attali and Stourdze, 1977: 97-111). In Great Britain, the telephone was viewed as a threat to the telegraph system in which the government had largely invested. The conviction also existed that the telephone wasn't a mass media instrument, but useful only for cities, industry and businesses (Perry, 1977: 76). These opposite considerations prove that technological logic doesn't determine social meaning. Social and political contexts largely influence the reception of new devices.

At the same time Americans pushed those limits by determining whether, when and how they would use the technologies, given that the devices were practically available. Farmers adopted the phone for reasons of practical and social utility, but later abandoned it, perhaps in part because other devices, such as the car, could serve the same end of relieving their isolation and facilitating social contacts. Urban working class people didn't rush to subscribe. Besides having limited income, they had fewer job-related needs. They could also use public phones or borrow neighbours' phones.

The shift of the phone in America from an option to a requirement happened around World War II. At that time the telephone became an expected item in middle-class homes. Businesses catering to the middle class presumed that customers had telephones, formal manners made room for it, and organisations built their activities around calling. The automobile became a middle-class necessity perhaps a decade before the telephone. Even lacking the symbolic power of the automobile, it also became a structural if not an emblematic necessity. The telephone evolved from miraculous in the nineteenth century, to mundane in the mid-twentieth century, to mandatory by the end of the twentieth century (Fischer, 1992:191, 192).

## 2.4 Telephone sociability

The use of telephone for sociability purposes did not fit the view of the experts because they dismissed those who use it mostly, women. However, regardless of these views, conversation and sociability were the main uses of the telephone in the early days. Research quoted by Fischer (1992: 230), carried out in Seattle in 1909, reveals that half of the calls had some social content, and 30% were idle gossip, at a time when only about one-third of Seattle households had telephones. Rural people, especially farmers' wives, depended heavily on the telephone for sociability until they had cars. Women called often for social purposes, and frequently even for simply "visiting", as far as back as the 1910s. Conversation is an important social process, serving to maintain networks and build communities. This was ignored by industry leaders, journalists and other male critics. Time-budgets filled out by suburban New Yorkers before World War II revealed that women spent four times as much time on the telephone as did men. In other parts of the USA, the higher the proportion of adult women in the household, the higher the chances were that it had a telephone.

The industry view in the 1920s was that women, acting as "chief executive officers" of the household, should telephone to order goods and services. Women's social calls were considered a problem, and they initially tried to suppress them. But women cultivated their own purposes, "delinquent activities", primarily social visiting (Martin, 1988). Farm women used the phone to sustain social activities and help create community bounds in rural areas; in urban areas, middle and upper class women used the phone for organisational activities, young urban women used it for courting. In the late 1920s and 30s a change occurred, and telephone advertising increasingly depicted women using the telephone for sustaining social contacts and conversation. Fischer proposes a few explanations for this gender difference. The isolation of women from adult contact during the day, the fact that married women's duties include the role of social manager (appointments, events, keeping informed about relatives and friends), and that North American women are more comfortable on the telephone because they are generally more sociable than men. So the telephone fits the typical female style of personal interaction more closely than it does for men. From the first decades of the 20<sup>th</sup> century women used the telephone to pursue what they wanted, conversation (Fischer, 1992: 232-235), and were responsible for the development of a culture of the telephone as they instigated its use for purposes of sociability (Martin, 1991: 171).

"We cannot neglect to account for the pleasure, solace, and companionship that many women derive from the telephone. Because they are generally less mobile and less independent financially and more likely to be isolated from other adults than men, many women have found the telephone to be a lifeline to mothers, sisters and friends... We should not dismiss the telephone then, as another source of women's oppression, but recognise the complicated role it has had in the shifting place of ideology and gendered experience (Rakow, 1991: 81)

Another important role women held in the early days of the telephone was to work as telephone operators before automation (see Martin, 1991). The switchboard created a respectable career for many thousands of young women. The absence of special training, the qualities required of dexterity, patience, forbearance, as well as the cheapness of the female workforce, favoured this fact (Maddox, 1977: 263, 266). The operators, known as "Hello girls", were outsiders to the expert world brought inside

on a model of domestic servitude under the potential social control of the bourgeois household. For example, they often acted as alarm clock or tasks reminders. Nevertheless this model didn't fit the reality. They served more than one household and were not subject to taboos or claims of loyalty binding those inside a household (Marin, 1988: 84-85).

The nature of telephone sociability is a weaker form of the statement that the telephone replaces face-to-face meetings, so people began calling neighbours and friends instead of dropping by. People increased their total conversations, and the use of phone to arrange dates, trips and meetings suggests that calling assisted even if it did not generate many inter-person encounters (Fischer, 1992: 236-237). Worries about eavesdropping were present since the beginning of the spread of the telephone, but so was the interest in doing it. Many of the first telephone lines used in America were collective, called party lines. A few households shared the same telephone line. Each household had a particular ringing tone. Therefore they could know when it was a call for one, but also when it was for another. Thus, eavesdropping was as easy as it was tempting. The conflicts and quarrels arising from this practice were the reason why the Amish banned the device (Fischer, 1992: 241). Maintaining personal relations by telephone became common in the middle class and farms of the 1910s and early 1920s. By this time Americans used the phone largely for sociability. This was more true for women than for men, for the younger more than for the older, for the gregarious more than for the shy. The communications modes displaced by the use of the telephone were curtailing telegrams and hand-delivered notes. It probably cut down the casual drop-in visits and helped to arrange other meetings (Fischer, 1992: 253).

## 2.5 Localism

Localism is understood here as the extent to which the locality bounds, delimits, or sets apart residents' lives, including their work, personal relations, political involvement and identity. The study of Fischer (1992: 194, 220-221) reveals few changes in localism. There is a net trend in the direction of greater attention to the outside world, rather than indication of a *displacement* of local interest. These changes suggest a simultaneous *augmentation* of local and extralocal activities. People weren't uprooted by the new technologies, locating their activities and interests somewhat more often outside the towns, but mostly they expanded their local activities. Perhaps the characterisation of a move towards privatism rather than extralocalism best describes the bulk of the changes. The telephone cannot be substantially credited or blamed for undermining localism in the early 20<sup>th</sup> century. As Willey and Rice argued in a monograph published in 1933, people used the telephone to increase local ties much more than extralocal ones. Phone calling strengthened localities against homogenising cultural forces, such as movies and radio. It also enabled Americans to participate in activities more frequently and more easily outside their localities. As Fischer affirms, people called relatives long-distance, made more trips to tourist spots, followed their sport teams to more games. Although the balance of change was in the direction of the wider world it was not a weighty shift, not as substantial as the increase in total social activity. Keeping in touch with the loved and the familiar allows one to conjugate security and geographical mobility (Cherry, 1977: 123).

Before World War II the subscribers to residential telephones in the USA did it mainly due to job related reasons. They were doctors, businessmen, farm owners and specific white-collar workers. There were social reasons for rural and suburban residents in a relatively isolated situation. Young people, and especially women, quickly developed a taste for the new device. Emergencies were also a main reason to subscribe. The reasons were a mix of need and taste. Tastes changed over time, as did the subjective perception of the phone. Theatre and literary authors used it as a symbol of wonder and sophistication, like in the so-called "white telephones movies" before World War II, and afterwards as a symbol of threat, violence and powerlessness (Fischer, 1992: 242). Telephones were also the more mundane symbol of interpersonal and intimate communication, with its joys, sorrows and frustrations, as in the example of the Jean Cocteau's 1930 play *The Human Voice*. In this monologue, converted into an opera in 1958 by the French composer Francois Poulenc, a woman, jilted by her lover who is about to marry another woman, is alone in her bedroom. She engages in a farewell phone conversation, often interrupted by disconnection and other voices on the line. The play is not only the psychological description of a character but also a criticism of the dreadful French phone service of that period. The woman's mood changes while she tries to obtain an explanation of her lover's betrayal, from anguish, loneliness and madness, to forced calm when she pretends to be brave and to exasperation towards the phone operator. At the end she winds the telephone cord around her neck in a desperate gesture, falling on the bed, her head hanging, the phone receiver lying like a stone. The phone is the mediator in this drama, the technological symbol of the communication and also of the sentimental helplessness. This play has been filmed by Roberto Rosellini featuring Anna Magnani, *Amore*, 1948; an American television adaptation was made in 1967 by Ted Kotcheff with Ingrid Bergman. Pedro Almodovar's film *The Law of Desire* also includes an extract of this play.

The telephone was perceived by its first users as a way of reducing loneliness and anxiety, a purveyor of increased feeling of psychological and even physical security. These characteristics were studied in a particular situation, the sudden deprivation of the telephone. In February 1975 a fire in a switching centre in New York left a 300-block area of Manhattan (around 100.000 customers) without phone service for 33 days. The research carried out afterwards about this period studied the hypothesis of the telephone as a reducer of loneliness and anxiety, a maintainer of the groups' cohesion, or as an intruder in the private sphere. The results showed that there is no satisfactory alternative to the telephone and its essential role to urban life-style. These unfortunate New Yorkers felt isolated, uneasy and less in control of their lives. There weren't clear compensatory behaviours. The jump on TV and radio consuming or on visiting friends was modest. The receiving calls were missed more than the outgoing. The telephone is an instrument of urban adaptation. It allows an imminent connectedness and an immediate interaction that shapes the symbolic proximity, which counteracts social mobility (Wurtzel and Turner, 1977: 246-261). Telephones did not cancel out distances or the organisation of space, but modified the use and effect or both. Telephones are operators of concentration and dispersion. In the example of the skyscrapers they facilitated the office concentration in urban areas. In the other hand, by providing a sense of proximity beyond physical presence they helped mobility and dispersion. Patterns of settlement are determined by other factors. The telephone helped in the development of larger metropolitan systems with a more diversified and complex structure (Gottmann, 1977: 306, 309-311).

The telephone soon became a technology of sociability, reinforcing the local relations. It represented the expansion of a dimension of social life: the realm of frequent checking-in, rapid updates, easy scheduling of appointments and quick exchanges of casual confidences, as well as the sphere of long-distance conversations. The case of the early years of telephone use in the USA didn't reveal any clear sequence of dramatic social changes. There are no psychological changes that mirrored the characteristics of telephone. Americans used the telephone to enhance the way of life they were already committed to. Its history is different from other technologies, such as the automobile. This history is also a proof of the user's autonomy from the pressure of vendors and from any supposed technological imperative. Such autonomy is never total. It's limited by structures beyond their control, as the incomes, the prizes, where companies marketed their services or the role of government (Fischer, 1992: 268, 269).

## **Conclusion**

The telephone network constitutes the most ubiquitous technology and "the largest and most complex machine in the world" (Cherry, 1977: 122). It embeds a plurality of uses, among others those quoted by Katz (1999: 353): a way of extending sexual interests, projecting interpersonal power, maintaining, destroying and penetrating status differentials, practising surreptitious surveillance, shocking, imposing one's agenda on other people, repairing or breaking off a relationship or seeking and making confessions and expiation.

The history of the introduction of landline telephones shows that the affordability and the availability of the phone made the subscriptions first in the more affluent households, and quite late in the working class ones. The prejudices, narrowmindedness and will to keep the phone as an elitist product of the early industry men facilitated the slow spread of the telephone. In relation to the dynamic on the modernity, the early use of the phone for emergency calls, commercial activities and sociability/conversations widened and deepened existing social patterns rather than altering them. Telephony enhanced the participation of all kinds, local and extralocal, expediting the expansion of all social activity. Instead of a growing impersonality of the exchanges and communications, the phone favoured and increased privatism: the participation and valuation of private social worlds as opposed to the larger, public community. Most people regarded telephoning as a way of accelerating social life, breaking isolation and increasing social contacts. A minority complaint about gossip, unwanted calls, wives and children talking too much, or found it disturbing and anxious.

This review raises some interesting issues, which could be useful in the perspective of a study on mobile communication devices. One is the conflict between the users' views and the industry men regarding the ownership of the device and the right uses. This conflict between users and producers could be important in the case of 3G mobile phones and the increasing number of partners. Another important teaching from the history of landline telephone is the power of users to impose their purposes, even in a constraining context, and how neglected and marginal users find successful uses, unknown or dismissed before by the experts. Women and sociability, teenagers and SMS are two different examples of this fact.

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# *Chapter 3*

*A Social Map of Mobile Telephony: a literature review*

## 1 Introduction

The mobile phone seems to have inherited from the land line telephone a lack of interest by social scientists. Few studies are concerned with this technology. As with the old phones, mobile phones' quick acceptance and "naturalisation" are the reasons given to explain this oblivion. Radio and cinema yesterday, and the Internet today, are more spectacular and exciting subjects for scholars. Mobile phones are also elusive to conceptualise. Although being an example of new media, they have the transparency and naturality of the fixed phones. As conveyors of talk their mediation is forgotten. They are not a form of representation, but simply a medium (Cooper, 2001: 20). According to this fact, it is necessary to find elusive and disposable concepts to grasp mobile telephones, able to understand a technology which connects local (conversations) and global (network, satellites, transmission points), which is a point of contact between different domains (public and privacy, work and home). A theoretical mobility is required to study this assemblage of people and technology forming a network that enables actions at distance (Cooper, 2001: 29).

Despite the strong link with land line telephones, mobile phones are a new type of technology--mobile, small, and potentially constantly connected. Their use shows new communication patterns embodied in short messages and calls. For mobile phone calls and SMS the threshold for making contact is lower (Kopomaa, 2000: 63, 112). Instead of competing with other technologies of communication, they allow different communication patterns (Harper, 2001: 222): short messages and short calls, the possibility of transmitting a mood or a particular experience in real time or, in work situations, brief conversations primarily serving the function of making sure both parties agree with some brief discussion of status or progress. Mobile telephones are multifunctional and complex: "The computer has disappeared inside the mobile phone" (Brown, 2001: 5). Their different functions--send and receiving calls and messages, phone book and calendar, clock, games, calculator, online data, caller identification, personal voice mail--are some of the reasons for their success. This also implies that there are multimodal devices, including voice, text and images. Mobile phones consist of hardware (handset, battery and charger), software (menus and display-based controls), "netware" (network, type of service) and "bizware" (marketing communication, details of the service agreement, calling plans, sales policies and customer service) (Palen and Salzman, 2001: 136). This complexity explains the difficulties in conceptualising this technological device, and also the difficulties faced by new users in understanding it.

One of the specific aspects of mobile phones that will be developed in this review is that it is an "indiscrete technology" (Cooper, 2001: 24). It is not that mobile phones facilitate forms of social indiscretion, but they do have the capacity to blur distinctions between ostensibly discrete domains and categories, such as public and private, remote and distant, work and leisure. These categories were already problematic before the appearance of mobile phones, but these provide a way of linking and one route to rethinking them. The study of the use of mobile phones in different social situations exposes the taken-for-granted nature of society (Ling, 2001).

Instead of thinking of the telephone as a technological addition to communication, Cooper (2001: 28) proposes to consider it as something presupposed by

communication, a signifier of communication more generally, a representation not of the technological rationality but of the sociability in itself. Its role in novels, plays and visual arts is an example. Phone conversations and the telephone as an object symbolise the characteristics, limits and ambiguities of human communication. Phones are a kind of “quasi-object”, a term that French philosopher Michel Serres applied to assemblages of technology and normative social practice, neither constitutive of, nor reducible to, the ways in which it is used (Cooper, 2001: 28).

## **2 History of a non-development**

According to Barry Brown, the history of the development of mobile telephony is almost the history of a non-development (Brown, 2001: 7-10). The first commercial systems were up and running in the 1940s. It took 30 years to acquire a mass market. It was delayed by decisions to favour other technologies. The first prototypes were fairly crude technologies. Car based radios would broadcast and receive transmissions from a single fixed based station, where the radio channel would be connected to a land phone line. This system suffered from a chronic lack of capacity. The frequencies used by a call could not be reused. They were blocked by one call for as far as the radio transmissions were received. There was a separate channel for each call. The lack of frequency, not the lack of interest by the public, prevented the early mobile phones systems from becoming mass-market devices. In 1976 there were 44,000 people with mobile phones in the USA, and 20,000 individuals on a waiting list of 5-10 years. Nevertheless, the solution to the capacity problem had already been created in 1947, splitting the coverage area into individual cells, and the technological challenges arising from this procedure were solved by the late 1960s. However, mobile telephony was delayed throughout the 1970s. Regulatory and business decisions made by the governments and by the telephone companies explain this delay. Authorities hesitated to allocate spectrum for the telephonic system over the frequency required for new TV channels. Companies interested in the development of mobile telephony were involved in legal disputes with AT&T. Therefore, the first mass market for a commercial cellular phones system in the USA started in 1983, 37 years after the first carphone service.

This development wasn't much quicker in other countries without those regulatory constraints, such as the Scandinavian countries, where the mobile phones were launched in 1981. Scientific researchers and engineers were also reluctant and not really interested in this technology, in contrast with the interest in the development of videophones in the 1960s and 1970s, despite the response of market trials. The scientific preferences for one type of technology and the disdain for others, the strange attraction despite commercial failures, is called by Brown a form of *pathology* in the mind of technological developers (Brown, 2001: 9)

### **2.1 The Finnish Example**

Unlike wired phones, the US is not the leading country in the development of this new technology. Even today the penetration rate of mobile phones is less in USA than in Europe or Japan. The mobile phone system in the Scandinavian countries is the second commercial public mobile telephony system in the world, behind the Japanese system, inaugurated in 1977. A combination of political and cultural factors

explain the spread of mobile phones in Finland (Roos, 1993: 3-4, Kopomaa 2000: 28-30):

- An efficient state infrastructure with a traditional telephone network that was already highly developed.
- The existence of long distances and the difficulties in building a fixed telephone network which covers all the territory. Large numbers of Finns spend their holidays in cottages in the countryside or in boats.
- The early creation of the Nordic Mobile Telephone (NMT), a comprehensive, integrated and technically efficient system for the Nordic countries, through joint agreements among the state telecommunications companies. All telephones in the system were always accessible independently of their location.
- A dynamic private electronic industry.
- The price structure. Although the handset was relatively expensive in comparison with other countries, its use was relatively cheap compared to traditional telephones, and cheaper than in other European countries.

In Finland, like in the US in the 1970s, the demand exceeded the supply. This was "always quite unexpected" says Roos: unexpected for the industry, which marketed first the companies, especially small private entrepreneurs. In the 1980s and early 1990s, European and American mobile phone companies followed the same strategy as the fixed telephone companies in their early days: high prices, exclusive use and avoidance of mass market. In the Scandinavian countries, however, the marketing strategies targeted both the business market and the mass market. The distinctive, yuppie use was a nuisance to avoid as much as possible, because it gave the product a bad image. This use was perceived as a way of showing off. Advertising campaigns stressed the dis-identification between the device and this use in order that people who didn't want to be identified as yuppies weren't ashamed of using and purchasing a mobile phone (Roos, 1993: 10, 12).

Kopomaa (2000: 33) defines three stages of the spread of mobile phones and the roots of "mobile phone society" that could be applied to other countries:

- 1- Class market (1975-1990): mobile phones are expensive and rare, their users are mainly travelling sales representatives and their image is a "yuppie thing".
- 2- Mass market (1990-1995): mobile phones become a personal commodity for the general public, new technologies and low prices increase their popularity.
- 3- Diversified mass markets (1995-): mobile phones are manufactured for different groups and lifestyles, and the distinction associated to the use is subtler. Mere ownership is not enough. Therefore the personality and the personalisation of the device are stressed.

Kopomaa (2000: 36) defines the mobile phone as a personal device with allows users to enhance their mobility and their accessibility. We are going to look closer at these three aspects: mobility, accessibility and the phone as a personal device.

### **3 Mobility**

Mobile phones are an example of what the French anthropologist Bruno Latour calls "immutable mobile". This concept denotes a technology, an inscription or

representation (such as a map, for example), in which the portability of unchangeable, though recombinable, information from one setting to another makes possible action at distance (Cooper, 2001: 19). Mobile phones are "nomadic objects", like laptops, PDAs and personal stereos. The independence from a particular location is one of the main features of the mobile phone, leading us to the (not always true) statement that it can be used anywhere and at any time. This kind of phone frees the users from a fixed location and allows them to be simultaneously locally reachable. The mobile phone becomes in itself a kind of place where its owner can be found.

“The mobility of mobile phones differs from (the) traditional mobility. In fact, it’s not mobility as such but the combination of mobility and permanence, the call is mobile, while the person who is being called is “always there”(Roos, 1993: 2).

Different kinds of mobility are related to mobile phones; mobility of the user, the device itself, and the services that can be accessed from different locations. There are also different degrees of mobility. Churchill and Wakeford (2001: 174) understand mobility in the case of mobile workers as a continuum from tight mobility to loose mobility. This mobility is the experience of needing real time synchrony while on the move, maintained throughout ongoing negotiations in established relationships where location information is easily shared or predicted. This is highly collaborative. Loose mobility concerns the requirement of accessing documents or information on the move, asynchronously and without requiring input at such detailed level. It is also highly co-operative, but not collaborative at a detailed level. The fact that it was a mobile device was one of the main attractions when the product was launched and marketed to mobile workers. But since the mid 1990s surveys done in Europe, as the one quoted in Fortunati (2001), have shown that there wasn’t a correlation between the mobility of the users and the use of the mobile phone. This is contrary to the opinion that mobile phones are instruments which enhance mobility (Kopomaa, 2000: 12). The force of attraction of the device was beyond the constraints of mobile work or those of residential mobility. When the device enters the domestic and leisure spheres it changes its identity and loses its connotation of being a mobile technology (Fortunati, 2001:98). Some of those convivial uses reveal another kind of mobility, called micro-mobility by Weilenmann and Larsson, the way in which an artefact can be mobilised and manipulated for various purposes around a relatively circumscribed, or "at hand" domain (Weilenmann and Larsson, 2001: 104). Mobile phones are also a tool for local interaction, rather than merely a device for communication with others who are distant. This kind of use can be observed in the way teenagers employ SMS (Weilenmann and Larsson, 2001; Kopomaa, 2000; Taylor and Harper).

#### **4 Accessibility**

The possibility of maintaining a continuous connectivity coexists with the worry about the continuity of accessibility, concerning unwanted demands, the annoyance of being interrupted and the fear of being controlled. Cooper (2001: 27) quotes both attitudes about the possibility of perpetual contact: from the utopian considerations about an ideal community achieved by unrestricted communication, to the dystopian view of alienated people, treated as resources and instruments, victims of oppression by the mobile imperatives and submission to the machine. Being these mobile imperatives, the ownership, social pressure to have one, the use, the pressure to utilise it and the availability, the pressure to have it switch off. Empirical research reveals

that both utopian and dystopian views don't fit real uses. On the one hand, any kind of real community or human relationship could withstand the nightmarish perspective of an unrestricted communication. On the other, mobile phone users, from mobile workers to teenagers, know how to limit their accessibility, not fighting the technology but using its capacities (switch off, divert calls, voice mail, call screening, etc.).

The question of accessibility is therefore directly linked to the mobile phone as a tool of surveillance or monitoring. Green (2001: 33) proposes to understand the information gathering activities beyond the concept of surveillance. Those activities are taken for granted as resources in the everyday relationships of trust, not only between the state and the citizens, or between individuals and other corporate bodies, but among individuals in the course of intimate and interpersonal relations. In our society the notion that individuals should be available and accountable to others, visibly and transparently at any time and place, becomes normal. The question "where are you?" asked in mobile phone conversations is a form of establishing mutual contexts for communication, and enables shared circumstances between people communicating at a distance and a relation of mutual accountability and trust. Accountability is a feature common to co-present social relationships and to those established via mobile phones. Different technical systems allow people to communicate and to be monitored (internet, e-mail) as well as information to be gathered by commercial institutions. Mobile phones are an example of this convergence of communication and information in the same device. A better understanding of the notion of "surveillance" should also take into account that, as a practice rather than a concept, it is contextually dependent, and highly reliant on changing notions of the relative intimacy or abstraction of the relationship concerned (Green, 2001: 36-37). In the case of mobile workers, this monitoring activity is not only a way of controlling the individuals in the move; it also allows workers to keep informed of what happens in the office. Mobile phones are a form of remote background monitoring activity, which help with the catch-up period when returning to the office. Calls made to colleagues in the office are also a way of avoiding oblivion, of not being "out of sight, out of mind" (O'Hara, Perry, Sellen and Brown, 2001: 184).

In the example of the relationship between teenagers and their parents, the monitoring and regulation by adults is supported and resisted by teenagers themselves in moves toward independence and control of their own affairs. Mobile phones provide a site of negotiation for monitoring, regulation and mutual accountability. Teenagers are aware of the importance of mobile phones with regard to safety and emergency situations. But they also avoid parents' monitoring by not answering the phone or not telling the truth (Ling, 2001; Green, 2001: 38-39). By saying where they are and what they are doing individuals can simultaneously monitor their own and each other's work practices. Social normalisation of monitoring practices at the level of everyday life in public and domestic settings means that individuals can use their mobile phones to assist their own surveillance by institutions, as well as resisting it. At the same time they also engage in routine monitoring of themselves and each other through that same technology, and assume that others are self-regulating and accountable for their use of the devices in both co-present and tele-present contexts (Green 2001: 43-44).

Laurier (2001: 46-61) describes other ways of avoiding the undesirable consequences of the permanent accessibility provided by mobile phones in the case of mobile workers using call screening and voice mail. Mobile workers face a combination of two realities: the need to harmonise among multiple flows of activity and the interplay of planned and improvised action (Sherry, 2001: 112). They suffer the tension of the "anytime, anywhere" possibilities of communication of the ubiquitous mobile phone. The potential disruptions of the constant availability make necessary a way of controlling the access. Doing things that are free of time and space can be highly disruptive when the present time and space require our attention. Mobile technologies of connectivity like the mobile phones produce tensions in bringing together what is present and what is not. The voice mail service is a form of call storage which is translated in return calls. In the case of the mobile worker studied by Laurier, the recorded calls are transformed into "Post-it" notes, emotional clues for the day ahead and requests to be noted and ignored. This service offers the possibility of responsiveness, without being drawn into the particular "concertedness" of phone conversations in "real time". It allows one's time-space to be extended, orients one toward distant and non-immediate requests and responses. Call screening is a finely crafted skill among mobile workers. It becomes even a mark of business credibility. "Everyone is busy call screening everyone else. If they don't, then Sylvia (*the mobile work studied by Laurier*) wonders what's wrong with their business!" (Laurier, 2001: 54).

"Remarks about technologies such as cars, mobile phones and WAP somehow causing work to be faster, more mobile and more connected-up tend to misrepresent the technologies and their users, glossing over how their spatio-temporal arrangement in use is just as much about slowing down, holding things in place and disconnecting (Laurier, 2001: 59).

The use of mobile phones by mobile workers contrasts strongly with the advertising images (Churchill and Wakeford, 2001). Advertising shows the "proper" use and helps to set expectations of use. The activities associated with the device are presented as unambiguously positive. According to these authors, advertising is part of the "domestication" of the product in the lives of business users. It outlines the unlimited access to others and to the information and the specific kind of temporality linked to the rhetoric of availability: urgency and vigilance about connectedness. Time is considered to be the ultimate limiting factor, and not the technological features: The image of the future in which there is an imperative to connect, and an imperative for mobile vigilance. The time perspective of this mobile use is characterised by the immediate synchronicity between those in communication. The access to information and to others is seen as unproblematic and always desirable. The devices will reduce the time taken to achieve our goals, reduce our time connect with others and increase our productivity (Churchill and Wakeford, 2001:163-164).

Nevertheless, the results of empirical research about the use of cell phones in the UK reveal the dependence of mobile connections on stable infrastructures (social, environmental and technical) and the seamless move between mobile and "static" modes of working. The capacity to act is linked not only to the technological features, but also to social conventions of communication which prevent straightforward collaborative acts, The time organisation of mobile workers includes mutually negotiated rhythms of contact, availability and accessibility. Services like voice mail

transform the mobile phone into an asynchronous communication tool. Moreover, technical features such as the connectivity to the network become the key sticking point only when the network fails, revealing how little people know about the infrastructure of mobile telephony. The real uses of mobile phones manifest the problematic access to the information and to the others. Problems arise from technical difficulties, from personal preferences, and from an inability to connect with others due to scheduling difficulties, sometimes caused by the devices themselves (Churchill and Wakeford, 2001: 173). The notion of "anywhere" implies an Euclidean geometric definition of space; that is, an equivalence of all places. But all places are not the same. Some of them prevent the use of mobile phone due to technical reasons. Furthermore, social rules of behaviour make telephone use inappropriate in places like classrooms, concert halls, theatres and churches. However, mobile phones are used in other places in which their use might seem impossible or difficult, such as noisy bars, clubs or rock concerts. In these situations the telephone helps to transmit an atmosphere rather than maintaining a conversation.

Something similar occurs with the notion of "anytime". This refers to a linear conception of time, which is the translation to time of the geometrical conception of space. This is a time where all moments are equivalents and measurable, where one can be synchronous to any others regardless to the place, the hour and the activity. The use of mobile phones is an example of how the discipline based on the time organisation and on the strict planning of different activities is replaced by continuous accessibility. The phone call is an advance arrangement, anticipates future meetings and prepares concrete proposals. The systematic use of time is replaced by systematic accessibility. Mobile phones facilitate an increased temporal efficiency by flexibility in the use of time. They allow the postponing and rearrangement of schedules, meetings and appointments. Nothing has to be agreed in precise terms any more. Exactitude in the measurement of time is no longer necessary to co-ordinate activities. Punctuality ceases to be the virtue it used to be. The future is no longer experienced as a sequence of discrete consecutive moments, but as a set of vaguely agreed-upon moments which can be renegotiated as the situation changes (Kopomaa, 2000: 48, 50, 55, 56). The conception and experience of a rhythmic time open to last minute changes and to continuous arrangements between different activities, at work or at leisure situations, is not originated by the mobile phone. But the device facilitates their diffusion.

The mobile phone makes the clock and the calendar unnecessary. It is a calendar and a clock. It becomes a navigation tool determining the co-ordinates of everyday living. These co-ordinates are colleagues, customers, friends, acquaintances and their schedules or the lack of them. (Kopomaa, 2000: 123). The mobile phone replaces the clock and the calendar as the timekeeper of the linear time concept. However, it is also the tool for a rhythmic, more spontaneous and "last minute" time organisation.

## **5 Personal but not Individual**

Mobile phones are also literally replacing watches and becoming the most common personal device. Unlike fixed phones, they are considered as a personal possession (Grant and Kiesler, 2001: 126). They are portable, wearable and become an extension of the body, like a watch. Their meaning is not only utilitarian and useful, but also emotional and entertaining. Mobile phones recover the playful aspect of the early

days of fixed telephone, when it was called "Bell's toy". Mobile phones facilitate creative expression, especially in the case of SMS. They are a kind of toy object and tool for play, with games, animations, pictures, smileys or rings. According to Kopomaa (2000: 70-71), the spread of technologies goes from novelty to invisibility, but in contradiction to this stage of "sobering up", the playful attitude toward mobile phones is likely to survive into the future. Portable phones inspire users to play with them, and that is precisely the quality that attracts people to the device. The symbolism of miniature objects emphasises this personal and playful character. Miniature objects are assimilated into toys and to the nostalgia of childhood, and also to intimacy, mobility, secrecy and control. Mobile phones enhance the owner's feeling of increased personal security and safety, and the ability to respond to sudden outside changes (Kopomaa, 2000: 36-37).

The use of mobile phones is associated with personal lifestyles. They have a value and act as a symbolic marker. Mobile phones receive a range of meanings linked to identity, sexuality and desire. Cooper, Green and Moore (2000) analyse the role of mobile phone associated with gay lifestyles, as they appear in fictions like "Queer as Folk" and in practices and discourses of young urban gay men. In the interviews quoted in the article, those men consider the mobile phone as a means to maintaining real-time contact with significant others, a decisive element of the gay lifestyle. The interest of such statements doesn't lie in whether they are true or not. On one hand, there is not just one gay lifestyle; on the other, the convivial use of mobile phones to strength friendship bounds and to maintain personal networks is not exclusive to gay men. But the fact that a common use is considered a particular and distinctive one, linked to a specific group and lifestyle, demonstrates the importance of mobile phones as personal devices taking part in one's own personality.

Advertising campaigns addressed to mobile work emphasise its individual use in both senses: as the enhancement of the personal skills and control over the environment facilitated by the alliance with this device, and as the only (or at least the main) device and format to carry and communicate information. According to the advertising rhetoric, one can not only replicate activities in the office and other spaces, but can surpass such activities with and through the device. Such images obscure other technologies and other formats in which our information is created and kept, such as paper. Workers are represented as individualist in their use of the technology. They are independent, and work alone. The technological devices are not part of a collaborative network of devices and collaborations (Churchill and Wakeford, 2001: 163). Nevertheless, as we mentioned above quoting this research, the use of mobile phones depends on stable social infrastructures. Mobile workers often find themselves in a situation of waiting. This waiting--for events to happen, for flights and trains, for information and business deals or for other people to do things--is a common experience which demonstrates an interconnected network of working relationships, collaborators and the interconnectedness of devices (Churchill and Wakeford, 2001: 172). Mobile phones are used in conjunction with other devices and with documents (O'Hara and al., 2001: 187). The same need for flexibility, in order to adapt to the unpredictable circumstances and contexts that makes mobile phone attractive, asks for its coupled use with paper documents.

Teenagers' use of mobile phones reveals that they are more than a personal device (Taylor and Harper). They are a tool for collaborative interaction in the local

environment. The sharing of mobile phones, as their more individual uses, helps to invigorate and sustain social networks. Weilenmann and Larsson, in their research with Swedish teenagers, identify different forms of sharing, from the "minimal forms of sharing" like showing, writing or deciphering SMS, to the "hands-on ways of sharing", as when several people take part in a conversation sharing the phone in a kind of multi-party talk. The borrowing and lending of telephones is a mark of trust and friendship, and makes the mobile phone a collaborative resource. These Swedish teenagers also share mobile phones with unknown people with the purpose of making contact, as when storing your phone number in other's mobile phones.

All these empirical examples show that the personal character of mobile phones doesn't imply that their use is individual, and even less individualistic. They are a tool for networking, for nurturing and maintaining social cohesion of groups, for creating "nomadic communities". However, the individualistic argument proves difficult to avoid in the minds of social scientists. It seems that it occurs with the link between mobile phones and individualism the same as with fixed phones and the process of modernisation. If one believes that we live in individualistic societies, the success of mobile phones can only mean that they are "perfectly suited to the ideology of an individualistic society", as Kopomaa asserts, forgetting all the examples he provides in the same book invalidating such a statement.

## **6 Re-animating dead times and transitional settings**

In the introduction to this review we outlined the indiscreet character of mobile phones, whose use blurs the boundaries between social spaces, like private and public. Moreover, this technology gives new life and new meaning to the transitional spaces and times of our everyday life. The separation between work and personal life is a 20th century concept. The one between public sphere and privacy is also a modern concept, especially characteristic of Anglo-Saxon and Protestant societies. According to Grant and Kiesler (2001: 121), wireless technologies bring us back to earlier times when the boundary between work and personal life was less distinct. A specific feature of mobile phones is to facilitate more communication in transitional work settings, like hallways and lobbies, and in "dead" times. They are also employed to make communication in mixed-use settings, like cars or restaurants. The authors reveal the resulting paradox: in the previous era increased mobility led to an increasing separation of work and personal place and life, but wireless technologies may be changing that.

Mobile phone communications make two different spaces become parallel: the physical space where one is talking, and the virtual space of the conversation. While using the mobile phone we are having simultaneously remote and co-present interaction. The coexistence of and potential friction between public and private are now material and observable phenomena. At the same time these uses reveal the limits of this separation. The use of mobile phones is sometimes considered an intrusion of the private world into the public sphere, and also as a resource for achieving privacy, like in the case of the teenagers at home, or when one member of the household wants to have a secret conversation. The former, being the case of private calls made in public places, requires a specific behaviour, non-verbal action and interaction, in order to manage the potential embarrassment. The avoidance of

eye contact and certain bodily movements display the "unwritten rules" of the use of mobile phones in public places (Murtagh, 2001: 85).

Some authors affirm that mobile phones, though increasing the amount of public communication, reinforce the boundary between acquaintances and strangers, because they prevent people from talking to strangers in public spaces, reducing these small exchanges that support social communication. Such a statement has to be contrasted with empirical observation. Patterns of social interaction among strangers are different in different cultures. Londoners didn't wait for mobile phones to stop talking to strangers in trains or at bus stops. In the other hand, in southern countries, where one can talk to a stranger without being considered potentially mad or dangerous, and where the rules of civil inattention<sup>2</sup> in public places never really ruled, this communication pattern seems to prevail despite the success of mobile phones. Kopomaa (2001: 17) considers that the use of mobile phones extends the intimate social sphere at the expense of the public, because we can have private communication in public spaces, which means a privatisation of the urban space. The author seems to forget that private conversations have always taken place in public, and that public and private activities and exchanges can take place either in public or in private spaces. Friends and relatives chatting in a train not only discuss weather or politics, lovers kiss in the park benches. Home can also be the place for work or for having an anti-globalisation meeting. Subjective experiences of the urban space don't mean its privatisation. The idea of the mobile phone as an example of the privatisation of public space is a quite common belief. Kopomaa shares the idea of the American sociologist Richard Sennet that dealing with private and intimate matters in a public milieu is a sign of an uncivilised society. This is not only a very arguable, but also an outrageously Anglo-Saxon, self-centred statement.

The use of mobile phones in urban places creates new urban practices and new meanings for urban space. As a tool of arranging affairs and managing social relationships, they intensify the use of public space. These changes force us to reconsider the definition of correct behaviour in public places, and of what is annoying. The spread of mobile phone use diminishes the annoyance of the phone ringing and the phone conversation, as long as certain rules are respected, like answering quickly and not talking too loudly. We disagree again with Kopomaa, who claims that in public urban spaces individuals have the "right" to create their own space, a private territory, and the corresponding frame of mind. The interruption of the immersion in private thoughts is viewed as the violation of a basic right associated with the use and enjoyment of the urban space (Kopomaa, 2001: 44). Urban public spaces have a soundscape made of different sounds and noises, among them the mobile phone rings. In a space out of our control, we certainly tend to create our own space. But the use and enjoyment of those spaces are not correlated with any supposed right not to be interrupted. The experience of strolling in urban spaces shows the opposite indeed. Different images and information constantly interrupt us. Moreover, the subjective daydreaming and reflections of strollers and commuters shouldn't be systematically considered private thoughts.

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<sup>2</sup> This expression created by the American sociologist Erwin Goffman refers to behaviours in public place like avoiding a state of mutual gaze.

The use of mobile phones is perhaps better understood if we leave the separation between public and private and consider it as a new space resulting from this connection between two different spaces. For instance, in the case of teenagers, the use of mobile phone at homes, as in the bedroom at night for the ritual of goodnight messages, is not only a way of escaping the monitoring of parents or of achieving privacy at home. It is, in their own words, a way of bringing college home, (STEMPEC Research Team, "The use of mobile phones by school children"), of communicating the two main worlds of their everyday life. It is also a way of giving a new meaning to this night-time when one is alone in the bedroom before falling asleep. The computer, the hi-fi and the Walkman also contributed to transforming the home space, creating a personal, but not individual, territory.

The mobile phone is a kind of virtual place. It belongs to the family of "Third Places" (Ray Oldenburg, 1989 quoted by Kopomaa, 2001: 110). Those are meeting places where to spend time and relax, let down the façade and be yourself, like bars, pubs, cafes, clubs, shopping centres. The main activity in such places is chatting and playfulness. Their features are youthful humour, comradeship, freedom from social bonds and obligations, therapeutic power and desire for change and relation between sexes, flirting and courting.

One of the main features of mobile phone use is the ability to escape boredom, to transform "non-places" and dead times into convivial and meaningful ones. The concept of non-place belongs to the French anthropologist Marc Augé. It refers to supermarkets, airports, hotels, railway and tube stations, motorways or shopping malls. These are transitory places which are everywhere and nowhere, and which acquire their identity from being on the way to other places. These spaces are shaped in relation to certain ends--transport, transit, commerce or leisure. Augé asserts that they are not meaningful, like the "real" places. Real places have a history and a social context, and embody normal social interactions, while in non-places people act fundamentally alone, without any particular reference to a common history or similar experience. We agree with Augé when he outlines the growing importance of those places in our contemporary societies, in terms of their spread and of the number of people and time spent in them. But this same fact questions their social meaningfulness. People inhabit those places, re-inscribe their identities, stereotypes and relationships in them. The use of mobile phone is a way of achieving this.

## **Conclusion**

Mobile phones are the most successful communication devices ever. The commercial launch of the device took a long time from the creation of the first prototypes. The pattern of diffusion followed that of the land line phones, from business and upper classes to a mass market centred on sociability uses. But this was achieved in a much shorter period of time. The reasons for purchasing the device were also the same: work efficiency, security in emergency cases and sociability. Many of the studies quoted in this review concern mobile workers or teenagers, the former in order to analyse the use of mobile phones in a work environment, the latter to consider the creative uses and the importance given to mobiles phones in their everyday life. Teenagers, youngsters and young adults have adopted the new device faster and more openly. According to the Eurobarometer survey of 10,000 Europeans between the ages of 15 and 24 carried out in April and May 2001, mobile phones top the list of

new technologies used by young people at least once a week (80%), with very little variation between countries. This is far ahead of computers, the internet and e-mail.

The launch and spread of wireless phones have aroused some fears, as happened with the land line telephones. A certain amount of "moral panic" about its effects ensues the adoption of many new technologies. Some of those fears are similar in both cases: threats to the health, danger of addiction, the decline of traditional interactions, the loss of interest in taking part in social activities or inconsiderate behaviour. Others are new, such as the privatisation of public space, the intrusion of work into the private sphere, or the increased possibilities for control.

We have briefly exposed the three most quoted distinctive features of mobile phones: mobility, accessibility and personal device. The study of the real uses of mobile phones reveals some limitations and enlargements of these three aspects. The experiences of time and space associated with the use of mobile phones have also been highlighted in this review. Some of these authors wonder about the parallel and opposite meanings derived from the mobile telephone uses: utilitarian use/leisure, autonomy/dependency, freedom/control, richness of interaction/introversion, private/public (Kopomaa, 2000: 122). Its ambiguity and versatility is the result of the mutual shaping between technology and social uses and meaning. The paradoxical aspects of its uses coincide with the ambiguity and limits of human communication.

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