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ESTUDIOS
DE JUVENTUD

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SUBJECT

This issue of the Journal approaches a fact of outstanding actuality as it is the phenomenon of the mobile phones among youth. It should not perhaps be the appropriate moment to do this from a sociological point of view because of a lack of a broader perspective of enough years as to see such phenomenon and analyse it with a holistic view. Yet, between history and sociology, between a more holistic and calm analysis of a past fact and a serious, topic-free presentation of what is happening right now, the Youth Institute has decided to do the latter.

In fact, mobile telephony, in its present-day digital version (GSM) sets out its history approximately in 1995 all over the world and mainly in Europe. In Spain, after just seven years, it has reached 30 million subscribers (out of a 40 million population) , while fixed lines, which are first laid in the early 20's of the past century, have not reached 17 million, and estimations are that they will start declining in the near future.

Therefore, we are witnessing to a true social, more so than technological, revolution, to a massive fact, more so that the adoption of the television set by the households in Spain (99.8% nowadays), and, of course, even more than the adoption of the PC, with only a 29.6% of household with it.

It is not only the overwhelming and impetuous fact, but, from a youth perspective, mobile adoption has a more extreme relevance, and perhaps especially –or anecdotally?- by the skilful, quick, dextrous, cryptic and massive use of the text messagerie.

Adults, by an large, have behaved –as almost always when novel technological facts are at stake, even more so when such facts have to do with youth, by way of criticising youth behaviour, saying how evil such technological gadgets are, how perverse they are for keeping human ties, how disturbing the mobile phones are in classrooms, in public buses, in public places, and how many maniacal youth is hammering compulsively with the big finger the key board to write a message.

Before this social landscape, which is not exclusive of Spain, of course, the Youth Institute has decided to devote an issue of its Journal, with the condition of analysing such phenomenon with academic rigor, and approaching it as something more than a fashion.

Given the fact that in Spain there is hardly no research about mobile phones and youth, a decision was taken by the coordinator, Prof. Santiago Lorente, consisting in gathering information from abroad, under the hypothesis that what happens out there pretty much coincides with what is the situation in here. Eventually, Spain should not be so much different…

Therefore, the coordinator asked his academic friends for help. In Europe, for the sake of space in this issue, several countries with larger penetration were chosen: Finland, Norway, Holland, Italy, Germany, Belgium, United Kingdom and France. Grosso modo, this list of countries keeps a fairly direct correlation with mobile penetration. Sweden and Denmark have similar rates than that of Finland. Spain is still slightly below the European average, very much like Portugal. Russia has been taken as part of Europe because, as the well-beloved Gorbachev once said, "Russia is part of the European Home", despite the fact that, as it will be seen in its respective article, is several light-years behind the European counterpart as far as mobile penetration. For the time being, mobile telephony is just a minor phenomenon around Moscow and Saint Petersburg. There is also an article about Japan, whose parameters are very similar to European ones, although a bit lower, and also there is an article about the great unknown in mobile telephony matters, the United States, that, exceptionally, does not reflect its Empire power and size. Because of the reasons that are explained in its article, the United States, as far as mobile telephony penetration and use, lags well behind, although not as much as Russia. South Korea, despite being invited to participate in this issue, finally declined, as the author friend was too busy at the moment.

If the reader reads this issue with a prejudice-free attitude, thirsty for learning more rather than backing up his of her groundless biliefs, picked up in the context of a superficial society as it prevails in the adult Spanish and elsewhere society, some important and enthusiastic avenues for reflection will be found.

The first is that the mobile telephony, both as a chat and written message pattern of behaviour, it is not the same for all types of youth. Young people start playing, then the send written messages, and they end up using mainly voice communication. This is pretty much the evolution. And there are also differences by gender: girls talk more than boys, and the latter write SMS messages more than the former; girls do communicate more affectionately, whilst boys generally do manage their lives through the phone.
The second conclusion is that mobile telephony is a fitting tool, and highly important, in relation with the creation and keeping of peer groups. The undeniable success of the mobile telephony would have no explanation if there would be no recurrence to such things as the impelling drive for group belonging, and the cultural worldview consisting of beliefs, norms, behaviour and feelings. The Italian authors speak of "virtual brotherhood" whereby young people, single child or at most with another brother or sister, in the so small present-day nuclear family in Europe, desperately looks for easinghis or her domestic loneliness and uses the mobile phone to feel that has brothers and sisters out of the home.
The third great idea that stems from the reading of the various authors –and please, adult readers, take a good look at this- has to do with parents and the rising family models. Parents have discovered that the mobile phone can be a good tool for keeping control of their children, as a "digital latch", in its very pure canine context, as it is called by the Norwegian author. And the children have discovered that the phone is a good way for getting away from parental control, looking for freedom, thus sheltering more in the peer group than in the family, so the mobile phone is both and at the same time, paradoxically, the keeper of the family ties and the breaker of them. Again, the Italian authors speak of the sham whereby parents simulate, with little success, control over the children, and these simulate independence, with little success, too, from their parents. And, likewise related to the family, it is observed in several articles how the new rising family models have to do with the working patterns which are caused by the "new economy" (larger working schedules, increasing introduction of women in the labour market, economic constrictions exerted by the ever-pressing consuming models set by advertising…). One of the consequences is the extended periods of time that the young people stay alone in their homes and hence the need for peer communication.
The fourth main idea has to do with the written language used in the SMS messagerie, which apparently scandalises so many adults. The fact is that the only novelty in this matter lies in the technological medium (mobile phone), but neither content (emotional communication, management of life…) nor continent (abbreviations, acronyms…) are nothing new, again, neither in the adult world nor in the youth world. In the first article it can be seen, in a rather exhaustive way, how this type of writing is nothing new. Do not panic, then, those worried by this, because abbreviated language, ideograms, smilies and emoticons, shorthand writing and typing, even Morse code, with accent marks or without them, with vowels or without them (like in the Hebrew spelling), with only drawings or with letters… will coexist with the officially approved language, with the official norms and with the Academies of the Language which care for the purity and historical memory of culture. Both communication ways have had, have and will have their place.
To end up, another prevailing conclusion from the reading of the various articles is that for the authors, pretty much contrary to what would be expected, the mobile phone is not a mobile or portable device, but rather a personal, individual one, tied up inextricably to the everyday life of youth, used very importantly while being in the sleeping room (in competence with the fixed phone, which does not offer enough privacy within the home public space) in order to strengthen the peer group identity and to break up, as a sort of "passage rite" the child umbilical chord to become a young person, like the old wrist watch in former generations.
About all this, and more, this wonderful issue speaks of, and the reader will find that, besides the summarising article by the coordinator, the voice, knowledge, experience and research skills of 19 authors, out of whom, by the way, 10 are women.

Santiago Lorente
Coordinator

YOUTH AND MOBILE TELEPHONES: MORE THAN A FASHION

Santiago Lorente
Madrid Polytechnic University

The first section gives a brief history of information and communication technologies (ICTs) to then lead into an explanation of the mobile phone's success in Europe and Japan in the second section. Although more moderately than amongst pioneer European countries, Spain has also caught the fever.
The article goes on to address the processes involved in young people's accessing, owning and using the mobile phone, with an explanation from they themselves and from parents.
Text messaging occupies an extensive area in the article where, apart from claiming that there is nothing new in the phenomenon of messages and the manner of writing them, the underlying "rules" of this new language are explained.
The article ends by turning to the sociological theory of the primary group, socialisation and role to explain the above mentioned phenomena, concluding that the mobile revolution must be understood not from its "mobility" but that this device is fundamentally personal, private, for local use and for affective type relations.

Key words: Mobile phone, GSM, SMS, Text messaging, Information and communication technologies (ICTs), Information society, youth, socialisation, communication, primary group, role.

Introduction

Addressing the sociological phenomenon of the mobile phone in general and in the youth field in particular is a great challenge if what is being sought is to get away from generalised clichés abounding in society under a kind of terrible, new, easy and superficial "gossiping" on the part of adults, and endeavour to explain what is happening in some depth whilst sociologically placing it in context.

To do so in a proper fashion, the Institute for Youth kindly accepted my proposal for commissioning personal friends from the academic world in the main countries with an article on the situation of the mobile phone and youth. That is why the issue of the magazine that the reader is holding has an extraordinary added value to the effect that it offers a deep, serene academic perspective on the facts in the main European countries (Finland, Norway, Belgium, Holland, Germany, the United Kingdom, France and Italy) and from the United States, Japan and Russia.

The most fervent wish of the undersigned who has co-ordinated the whole magazine is for the reader to address this subject with a calm mind, free of prejudice and to be predisposed, like a sponge, to willingly receive the gentle rainfall of sensible, exciting ideas that friends from the other side of the Pyrenees and across the seas have kindly recounted to us. Because, please believe kind reader, this is not a fashion, let alone a fad, but mobile phones are a real social rather than technological revolution which must be explained.

As the Belgian authors say (Claire Lobet and Laurent Henin) in their article, "the reality is more complex and certain profound social phenomena are hidden behind this mass adoption of the mobile phone".

Thus, we shall conclude this article not only with a theoretical explanation from the sociological vantage point but with a call to parents to read it and to Youth related institutions to endeavour to

understand this subject better and to act accordingly.

THE MOBILE PHONE IN THE CONTEXT OF INFORMATION AND COMMUNICATION TECHNOLOGIES, AND OF THE INFORMATION SOCIETY [1]

Since Volta demonstrated electrical phenomena at the beginning of the 18th century, he has been succeeded by a whole silent, powerful technological revolution. In 1834, Morse invented a wonderful trick to send information (to "communicate") consisting, above all, in a code and also in an electrical instrument that sent and received coded information. This instrument was the great-great-grandson of smoke, the tam-tam, fires, torches, messenger pigeons, signal telegraphs ..., of texts on stone, on papyrus, on paper, of the printer's, of files and of books, of newspapers, in short, of so many artefacts (artefact means "made with art") invented by the tireless human being to communicate information and to communicate with each other. The telegraph was a real landmark.

And then came subsequent advances: Graham Bell patents the telephone (remote voice) in Chicago in 1876 . In 1900, Marconi solves the problem of sending one way information without the corset of wires, from which the radio and television derived, i.e., the one way social media which nowadays is not only a reality but a permanent source of social conflict because of the political power they have illegitimately acquired.

But not only communication but information has been another concern of the human species: from the stones of Stonehenge, 3000 B.C., the abacus, hand calculators, "fingers" (that is, "digits") to count with ... until electronics made the first computer possible, the ENIAC, in 1946.

As from the nineteen seventies, all the foregoing converged, everything blended into a sort of crazy, passionate dance, information technology with telecommunications and the latter with the social media, shaping one and the same electronic technology to serve information and communication requirements.

Here is where the mobile phone and written messaging over the mobile was born. Child of Bell's telephone, for transmitting voice; child of the Morse telegraph, for transmitting text; child of Marconi's radio, for wireless transmitting of voice and texts. And, let us add, child of the first ENIAC computer, because the mobiles' cellular network traffic is in itself a gigantic, multi-spatial, distributed computer.

We possibly have, therefore, the most "polyhedral", most variegated, most complete, simplest and, at once, possibly most complex and, perhaps, the most beautiful technological artefact that the information society avails of at the present time, together with Internet (with a very similar philosophy). This is an instrument for communicating and being communicated with and, just like its predecessors, it facilitates and strengthens the human act of communication. Because human communication has always been supported, "indirectly aided", by an interface: smoke, drums, pigeons, lighthouse beams, the telephone!...

Technology, i.e., the technological supply, is already telling us of the arrival of the next "generations" of mobile phones: the UMTS (see Glossary at the end of the magazine) which will be offering even more services (such as Internet access) with a greater transmission capacity. However, it is the writer's modest prophecy that the UMTS, whilst not a total failure, will be successful in a much more moderate fashion, restricted in any event to the professional elite but not in a mass fashion to young people. It will be too expensive and will lose the attraction of what the German authors say with respect to what the mobile phone is called in Germany: the "handy", the simple, useful, manageable, friendly, or how it is charmingly called in Italy: the

[1] I would refer the reader to my article entitled *The Information Society and Youth* (1999) for a more detailed analysis on what Information and Communication Technologies (ICTs) are and what is understood by Information Society.

"telefonino"). The attraction of the current mobile phone is its straightforwardness, which is why it enjoys mass use, like the television or simple video functions. We shall see whether the prophecy comes true.

The accusation of the best human communication being "face to face" is therefore quite banal, because, since language was invented, (which, to begin with, is another interface) to be able to hunt, mankind has always used intermediations (interfaces) to communicate with each other.

In fact, the face-to-face is the least used type of communication. See the different basic types of communication, both the interpersonal and information kinds, in Table nº 1:

Table 1

Main variants in human communication

Face to face (two way)	By tecnical means (two and one way)	By traditional means (one way)	Social media (two and one way)
Conversation	-Messages with messenger pigeons -Telegram -Fixed telephone -Mobile telephone (voice) -Mobile phone (SMS) -E-mail -*Chats* over Internet -Video-conference	-Letter -Post card -Municipal edicts -Circulars -Official letters -Others	-Radio -Televisiin -Books -Magazines -Newspapers -Internet -Cinema and video -Painting (and art) -Advertising

The novelty is not the appearance of new communication interfaces but the "complementary nature" of all the media. The human being chooses amongst all this broad range as a function of the direction (one or two way), the public, the message content, the breadth of dissemination and cost thereof, amongst other factors. The video has not pushed out the cinema, internet has not replaced books and people carry on writing to each other, more by e-mail, but without the letter disappearing. In addition, communication by technical means can be seen empirically to favour and encourage face-to-face contacts: companies know, for example, that video-conference contacts end up intensifying the personal contacts of the people involved. And everyone knows the phenomenon of Internet contacts which end up leading to personal contacts either of the professional, affective or, on occasions, erotic type.

Interpersonal and information communication, together with women achieving equal conditions with men and the fall of communism, are possibly the three key events defining the second half of the exciting 20th century, as were the American and French democratic revolutions and the industrial revolution of the 18th century. This "informational" society (and not the information society as Manuel Castells likes to call it, in endeavouring therewith to give the substantive and not just participative character of information) has led to enormous contortions in the way in which we work, enjoy ourselves, move, communicate, gain and lose money, go to war, drug ourselves, train and cure ourselves, forming an incredibly disparate stage of lights and shadows, according to the "colour of the glasses we see through" in Campoamor's words (Lorente, 1986, 1994, 1995, 1997a, 1997b, 1998a, 1998b).

THE HEIGHT OF POPULARITY: THE UNEXPECTED SUCCESS OF THE MOBILE PHONE

In matters of adopting technology, the not always well analysed and understood play between technological supply and social demand ("market") always occurs. The error consists in thinking that the supply always automatically generates a demand when, in fact, it is a feedback system in which both polarities are simultaneously the cause and effect. Technologists generally commit this mistake.

It is true that, on occasions, technological supply runs ahead of social demand. This is the case of the automobile sector where technology is always generating novelties which the market accepts without a blink, partly because this technology is

"transparent" and, therefore, unknown to the purchaser: disk brakes, servo-steering, injection, 16 valves, ABS brakes, metalised paintwork, silent diesel engines with *acceleration* ... are but just a few examples of the features offered that the market accepts without batting an eyelid.
However, the case of mobile phones will pass into technological history as the phase where social demand, the market, ran far ahead of what telecommunications engineering had ever dreamed. Born timidly in the nineteen fifties in Chicago, the mobile phone did not get off the ground in the western world until approximately 1995 when the European GSM system took the lead over other American and Japanese systems and the market took it on board with a never imagined strength and impetus. But, further to the mobile phone itself, the market obliged telecommunications engineering to quickly address the demand for SMS text messaging (See Glossary) even beyond what such engineering knew about it. It was the market that forced new cellular network schemes, new phone models, new services, new applications and new (and competitive) tariff rate schemes to be parameterised. The only place where technological supply ran ahead of demand was the "aesthetic" features of mobiles (casing, sounds, size, icons, etc.) which are being so readily accepted by the youngest market amongst young people as will be seen later.
In short, the rate at which everything has been happening, unexpected to both the experts (telecommunications engineers) and laymen (the market) made what was only five years ago a prestige phenomenon for the well-to-do become such a socially mass phenomenon, or almost, like the wrist watch, and a phenomenon with non ethical connotations (annoy others, undue use in public places, etc.) become another phenomenon so necessary that people talking of it come to class it as "inherent", or rather, not talk about it as it is no longer necessary, just as neither is it necessary to talk about the wrist watch or the television in the home.

The articles following in this magazine present data on the penetration (number of subscribers) which are an unmitigated success of the first order for a technology which has been with us for scarcely seven years. Each article provides data in a different period which is why it would seem opportune to unify the date by taking a single source. See the data in the following tables: 2.

Table 2

Main parameters of penetration
In some of the most developed countries
(at end 2001, in millions of subscribers)

COUNTRY	MILLIONS
Germany	55.3
Italy	48.3
United Kingdom	45.9
France	35.6
Spain	27.8
Japan	65.5
USA	122.2
China	132.4

Source: IDATE, World Atlas of Mobiles, 2001 Edition

According to Business Week on Line, on 21 March 2001, the four pioneering countries were:

Table 3

Main parameters of penetration
in some of the most developed countries
(in March, 2001, in percentage)

COUNTRY	%
Holand	82
Japan	82
Hong Kong	82
South Korea	82

Source: Business Week on Line, 21-March -2001.

Relatively recent data give an idea of the gigantic penetration in some places and of the meagre penetration in others:
As the foregoing tables show, the sources do not coincide to a substantial degree on occasions and, in addition, the rate of growth is such that it is not possible to keep extremely reliable statistics.

Table 4

Main parameters of penetration in more or less developed countries, in comparison with the total population and with the penetration of fixed telephones (February 2001)

Country	Population (in millions)	Penetration fixed telephones	Penetration Mobile phones
Japan	127	49	55
China	130.000	10	5
South Korea	47	49	68
Finland	5.2	54	83
United Kingdom	59	57	52
USA	281	66	41
Africa	796	1.3	2.6

Source: World Wide Wireless, February 2001.

The tables also show that the market is close to saturation in Europe and Japan (not in the USA and Russia) so there are only two ways out for European and Japanese operators: to make their customers loyal instead of attracting new ones and to offer new, varied and attractive user friendly services at competitive prices. Time, and a future issue of the Institute for Youth magazine in a few years, will tell us what happened.

But not all developed countries have evolved in such a stunning way. Europe and Japan lead the success story. The United States is surprisingly lagging behind. And poor Russia is trying to get up to date despite its well known problems.

Concentrating on Europe, the Nordic nations, where mobiles were born, are in the vanguard. Amongst them, Finland, not only in cover and penetration but in manufacturing: Nokia, a company that started by making toilet paper, was able to adapt to the times and is nowadays the authentic leader with nearly one third of the world market in mobile manufacturing. The mobile furore is followed by Italy, then by the mid-European countries and, finally, by the south European.

LiAnne Yu, the author of the article on the United States, blames the US lag in mobile matters on several factors. First, the structural factors, i.e., different networks incompatible with each other (sometimes market freedom and competitiveness play these dirty tricks). Secondly, the lag is due to a clumsy tariff rate policy whereby not only the person making the call pays but also the one receiving it. Thirdly, there is a tradition of Internet and e-mail predominance. The American writes a lot, and so the American culture is a text culture rather than voice. And, finally, the author presents the very reasonable reason of the affordability of second and third lines in homes so that young people and adults can have their “own” phone in the house thus needing a mobile phone less, particularly the young members of the family.

Whenever we speak of Europe and Japan, we shall see that one of the *leitmotifs* of this issue of the magazine is that the mobile phone is not mobile but personal, to have privacy in calling and being called in a private, not public terrain, which it is obligatory to do with the fixed telephone.

Japan is a growing swarm of mobiles (although not on the levels of some European countries, such as the Nordic), as well as of users of the "*I-mode*" system which is the native version of the European SMS.

Russia is fighting all the elements, like Philip II’s armada at Lepanto. It is struggling against economic problems deriving from its peculiar political revolution. It is struggling against the diversity of systems and networks, just like the United States. It is struggling against the dearth of mobile use. It is struggling against gigantic distances which constrain total coverage. This is why talking of the mobile phone in Russia, according to Olga Vershinskaya, the author of the article, is to talk of Moscow and Saint Petersburg. And it is fighting, surprisingly, against the identity of the language in text messaging, because young people find it more familiar and friendly to use English words as they are shorter and more concise so there is a kind of “ruglish” arising, a mixture of Russian and English, like the “Spanglish” between Spanish and English in the world of Latin American immigrants in the United States. Happily, human imagination for

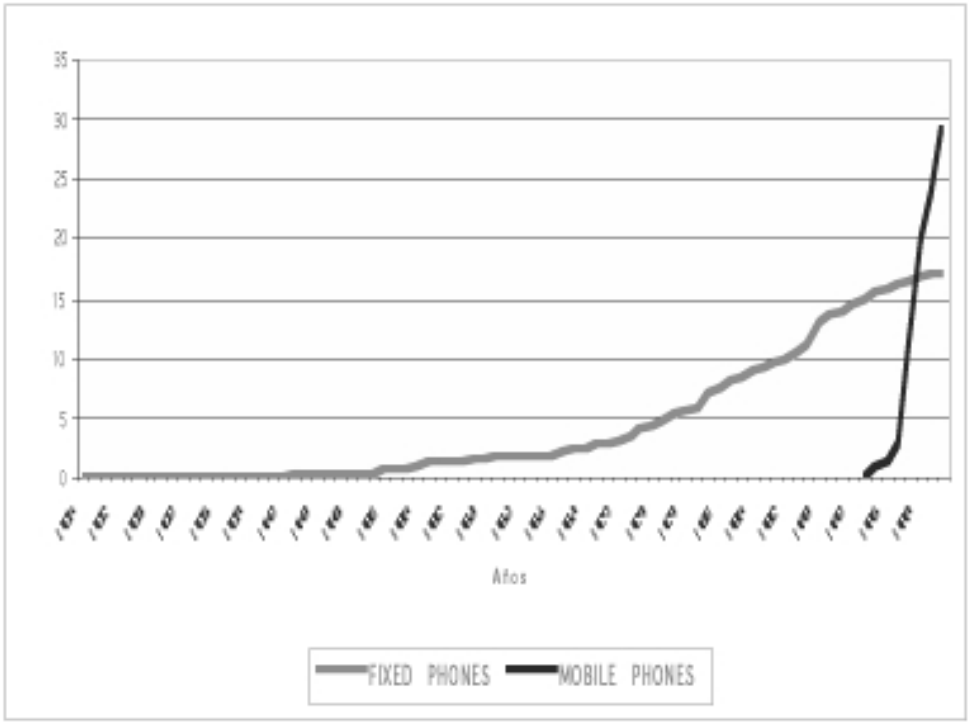
communicating exceeds the provincial rules of national languages.

THE SPANISH CASE: CONTAGIOUS FEVER

Although in a more moderate fashion compared to its European sister countries, Spain has also caught the mobile fever. Figure no. 1 has a great conceptual value and is extremely plastic because it covers a long period (1924-2002), with which the contrast between the penetration of the fixed

Figure 1

Penetration of the fixed and mobile phone in Spain (1924-2002)



Source: J. Serna, EGM, Operators, press, and UIT. Own preparation.

and mobile telephone acquires even greater relevance.

The data speak for themselves: in 78 years, fixed telephone lines reached 17 million, whilst in just eight years, mobile phone subscribers reached 29 million (30 million when writing these lines). This indicates two things: one, that technology is moving nowadays at unsuspected speeds greater than in the first half of the 20th century. And, second, that the mobile phone has achieved an unprecedented success. Let's not tire of saying it, without hyperbole or exaggeration: 1.76 times the success in one hundredth of the time.

It is not easy to say how many of these subscribers are young people for two well-known reasons: one, justifiable, many subscriptions use

the pre-paid formula with which the subscriber's particulars are not known as there is no contract involved; and the other, less justifiable, operators keep particularly quiet and do not allow the surveys they carry out to be published by reason of competition.

The mobile telephony market in our country is shared between three companies: Telefónica, Vodafone (formerly Airtel) and Amena. Table nº 5 shows the share out between the three:

Table 5

Spanish mobile market by operators , 2001

Operators	Millions	%
Telefónica	16,8	57,5
Vodafone	7,2	24,7
Amena	5,2	17,8
Total	29,2	100,0

Source: Operators.

Telefónica began operating with the analogue system (MoviLine), at the beginning of the nineties whilst Vodafone did so on 3 February, 1995 and Amena on 25 January, 1999. Six out of every ten subscribers are Telefónica MoviStar customers, one fourth are Vodafone and somewhat over one sixth are Amena.

Including Spain, it may be concluded from European and Japanese data, without fear of exaggeration, that the mobile phone phenomenon is as much oif a social revolution as you can get. Hence, the academic responsibility is to explain this revolution. The subsequent headings in this article will be devoted to such, in making a review of what the authors have contributed, in the form of a synthesis, to then end by explaining the phenomenon from the sociological theory.

No results from any Spanish research work are being published in this issue of the magazine for the simple reason that there are none. There is only one survey carried out on the whole Spanish society run by Amando de Miguel (De Miguel & Barbeito, 1997), which is not only out-of-date – in view of the mobile's rate of growth – but which, from our humble point of view, lacks an appropriate sociological framework for understanding the phenomenon. It is like wanting to understand electricity without knowing Ohm's Law. There does exist another inter-European survey carried out under the sponsorship of EURESCOM[2], profusely referred to by the Dutch and Italian authors in this issue. But it has not been possible to obtain the results of that survey for this magazine. Since the sudden, though expected, close down of FUNDESCO[3], Spanish operators have not concerned themselves with researching market subjects simply because they have the market more than assured in present times[4]. When the bad times arrive, they will probably begin to think of the need for research, to see how they can sell more and offer better services.

Therefore, there are no data in this magazine on the use of the mobile phone in Spain, especially by young people. This was the reason why foreign authors were invited on the assumption that, in knowing what is happening in their countries, the Spanish reality would be *basically* known. The experiment seems to have worked, because it can be *intuitively* seen that what they tell us in this issue is what is happening amongst Spanish youth in connection with the mobile phone, in its two modes of voice and written messaging.

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[2] EURESCOM is a consortium of the main European operators, amongst which is Telefónica de España, with headquarters in Heidelberg (Germany), engaged in researching subjects related to Information and Communication Technologies (ICTs)

[3] FUNDESCO (Foundation for the Development of the Social Function of Telecommunications) was founded in the nineteen seventies by Sr. Barrera de Irimo, Telefónica's Chairman, with the very sound purpose–now unfeasible, thanks to the "new economy "- of seeking more human applications for Telecommunications, especially for education and for the handicapped. The "good" humanist judgement of Juan de Villalonga, the company's next to last chairman, led to its final shut down, aborting the hopes of many of the telecommunications professionals who wanted to work on their human side.

[4] It must be said that there is a notable exception, the Airtel Foundation, born under the auspices and sponsorship of the operator going under that name at the time but now called Vodafone. This Foundation is making very noble efforts to get to know Spanish sociological facts in matters of ICTs and to disseminate them to the specialised public in an altruistic fashion.

ACCESS, OWNERSHIP AND USE

The authors state there are three stages in the process: one, access to knowing what the mobile phone and text messaging is all about; another, the fact of owning one as from the moment of adopting it (buy it or get it as a gift); and, finally, the third, the most sociologically important, the use the young person makes of the phone.
Access to the phenomenon naturally occurs within the group belonged to, by means of the classical "initiation" processes as part of "socialisation" processes.
Adoption generally takes the form of a gift from parents. The conscious and subconscious reasons the latter have to make the gift will be explained later. The low price, the now finished policies of incentivating use by gifting the phone and the facility for using it have been and still are factors aiding in making the purchase.
The articles hereafter demonstrate young people's skill and competence in using the mobile, the need for a certain degree of training, which is given by the "oldest" young people (verbal tradition within the tribe, such as that given by the witch doctor or the chief) and domestication (see Glossary) which occurs when the use and meaning of the phone go into frequency and culturally resonate. And here is where they all state that use and meaning have not only entered into resonance, but they have constituted – especially in the case of messaging – an authentic social re-invention which has caught telecommunications engineers and operators unprepared.
One of the most interesting conclusions drawn from reading the following articles is that the penetration and, above all, the use of mobiles is not univocal amongst young people but that age and gender or both variables at once, set differentiated patterns of use.
Thus the youngest of young people see the mobile as something *natural*, the same as the previous generation saw the television as natural on being born and growing up with it.The Italian author speaks of an extremely interesting concept, that of "*virtual brotherhood/sisterhood*" to explain the very young young person's compulsion to use the mobile and the SMS to talk to substitute brothers or sisters through his (or her) not having brothers or sisters since he/she is the only son/daughter or not having brothers(sisters) of the same gender. The one or two children type of emerging family is giving rise to this phenomenon involving the pressing need for the child/young person to have brothers or sisters to talk with. The use of messaging in this period is extremely heavy. And the mobile is everything but mobile: it is a personal telephone before anything else. But we shall be speaking further on this interesting subject later.
However, the "older" young people use the mobile for other ends. They are increasingly using the conference, the voice, instead of the written message. They need the immediacy of the voice and they do not stand the asynchronism of the message. They no longer call only their friends in the primary group, including their incipient partner, but they begin to call the "family" more. This period is one of "pre-socialisation" to adapt themselves to being the future dynamic professionals. And the mobile begins to be mobile, because the user begins to be so.
There are also differences in all the countries through gender. The very youngest boys want the mobile as a game console and above all have a recreational attitude towards it, like a gadget, a toy. The somewhat older boys use the telephone more to co-ordinate with each other, to get organised. And they do so extensively with the SMS, whilst girls talk more than they write, they communicate with each other in a process of "pre-socialisation to become maintainers of the social network" as the Norwegian author says, or for "socio-emotional communication" as the German authors say.
But a general, horizontal phenomenon occurs between boys and girls which involves using the mobile as a "safety barrier" as to their parents, to strengthen personal and collective identity and become emancipated from their progenitors.

A POSSIBLE EXPLANATION OF THE MIRACLE, FROM THE YOUTH STANDPOINT

The following authors expound a series of sociological explanations for the mobile *boom* amongst European and Japanese young people from the reality of youth.

The Dutch authors speak of youth spending long years within the education system (from the kindergarten to the end of university studies, almost one third of their lifetime) with a very busy life (studies, sport, hobbies, etc.) and little money since they are not active but passive workers. This all generates a single, powerful, closed social area where interpersonal relations, the gangs and groups acquire a very important significance. It is in this context where the way in which the mobile phone comes to fill a gap must be understood.

Practically all the authors explain the mobile *boom* amongst young people based on sociological concepts of the group and of primary relations which give rise to two urgent needs amongst young people: identity and communication.

Identity, because they need to feel who they are, young people amongst young people, in their own untransferrable, private area. To separate from their "disgustingly square" parents, in the Norwegian author's phrase. Identity and privacy therefore go hand in hand. And communication, because they need to build a social framework of values, standards and behaviours. In short, their culture. In addition, – more amongst boys than girls –, the mobile phone is seen as an instrument helping to organise life, to arrange dates and contacts, actions, meetings, etc., thus aiding in growing in maturity and autonomy, both necessary for the adult stage.

It is worth delving further into the desire for identity, bringing up the desire for the "personalisation" of the telephone. Young people find choosing the various personalised forms as regards casings and their colours, icons, call sounds, decoration, shape and size completely inseparable from their desires for identity. And the strange thing is seeing the makers' slowness and lack of imagination in not making a mobile phone in the shape of a heart. Girls would snatch them out of their hands. The ultimate aim is to identify the phone with their body, make it an extension to the body, the ear, the voice, the touch. The phone thus turns into a machine that becomes part of the self.

Richard Ling, the Norwegian author of American origin, launches an enormously fertile concept which is the "initiation", i.e., the mobile phone as a "transition rite" in the anthropological meaning. Transition rites were big, important landmarks in primitive societies and still are in ours, though more disguised. The first communion, the watch and other devices, such as nowadays the mobile phone, may become gifts of initiation into the youth stage of life.

Leopoldina Fortunati and Anna Maria Manganelli, the Italian authors, present another lucid concept, "virtual brotherhood/sisterhood". It is already known that the word "virtual", practically a synonym for "cybernetic" and "digital", indicates the social area and time that are heavily affected by the intensive use of information and communication technologies (ICTs). However, "virtual brotherhood/sisterhood" is the brotherhood/sisterhood arising with other young people who are not blood brothers or sisters in the case both of only sons/daughters and in the case of sons/daughters without another of their own gender in their own family. The key word is "loneliness". These young people feel profoundly alone, in a home where they have no "like" or "equal" to share feelings, values, hopes, grief, etc. and where the parents, because of new occupational demands, are fundamentally absent most of the day. It must be acknowledged that new, emerging family morphologies do not excessively help in creating propitious family atmospheres for the offspring. And it must also be acknowledged that the growing presence of women in jobs (like that of men, it must be said

right away) is a double edged sword, optimum for the personal realisation of the progenitors but bad for the children. At least whilst the job occupies eight or more hours a day. An authentic squaring of the circle. In consequence, the parents-children communication vacuum must be filled with full young person – young person communication.
It can be seen in the undertone of the articles that the mobile's success amongst youth is due to its aiding in filling the "deficit of social and affective ties" as Joachim Höffler and Patrick Rössler, the German authors say, and in this "incommunication society", as Leopoldina Fortunati and Anna Maria Manganelli, the Italian authors say. Some studies give 70% as the percentage of messages with emotional contents and others openly erotic, for which the SMS, like e-mail, offers advantages for not being face-to-face conversations in which many shy young people would succumb and would blush if doing so.
From what has been seen here, the mobile phone and text messaging fulfil all the requirements for being somewhat inseparable from and inherent to the young person and for offering him the satisfaction being sought.
To finish with the view of the mobile and text messaging from the young people's standpoint, a concept which has been repeatedly expounded by most if not all the authors in this magazine has to be emphasised. This is possibly a new concept for the reader. But before unveiling the secret, we would first define mobility and portability. The mobile phone has been wrongly called thus. But "mobile" is what moves on its own: a vehicle, a ship, an airplane..., a person. "Portable", on the other hand, is the object which does not reside in a fixed place, but "is carried" by the mobile entity due to its features of size and weight and lack of fixed ties (connections). It is therefore correct to speak of a "portable computer" but not of a "mobile phone" because, like the computer mentioned, it is a "portable phone". But language is stubborn and we shall still wrongly refer to a "mobile phone"[5].

Saying that the mobile phone is not portable or is hardly portable but before and above all is personal for young people, is a recurrent statement fairly well agreed on by all the authors. It is personal because of its morphology, as we have already mentioned. But it is personal mainly because of the use made of it. Young people conceive and use it for individual communication, and the area in which such communication occurs becomes trivial. It is similar to the fixed telephone, but it transpires that the latter is neither private or personal and a young person's thirst and compulsion to communicate cannot be sufficiently well undertaken in a public place. It is not a matter of (badly named) mobility or portability but of privacy. This is why the American author LiAnne Yu's intuition is splendidly sociological when she states that, amongst other network infrastructure reasons, the main reason for the mobile not having prospered as much amongst American as amongst European and Japanese youth is due to the enormous facility and very low cost of having second and third lines from which young people speak behind closed doors in their rooms in the United States. Something unthinkable in Europe. Privacy: that is the word. Delighted parents, as we shall be seeing later.
And, apart from not being mobile or portable, the mobile phone is rabidly local for young people (not thus for adults, it must be said). It is for talking to their reference group, which is the district's or locality's and, above all, their school's (which, in most cases, coincide with their district's or locality's). Leave globality for speculators, for politicians, for finances, for the media..., here we are amongst close young friends, with local problems and with a thirst for local communication.. It is a local, not a distant area,

[5] In the United States, Latin America and even in some European country, like Italy, it is called a "cellular phone", alluding to the morphology of the antennas which form cells, due to which one can speak and listen although the other persons are doing so in the mobile mode. It has other, more likeable, more human names, like "telefonino", in Italy, the "handy" (practical, simple) in Germany.

and a synchronous time and only slightly asynchronous in text messaging (one author recounts how young people phone the person to whom they have sent a message simply because they do not receive an answer in a few minutes). Therefore, kind reader, remember it well: The mobile is neither mobile nor portable, but personal and local.

POSSIBLE EXPLANATION OF THE MIRACLE, FROM THE PARENTS' STANDPOINT

If, from the young people's standpoint, highly coherent explanations are given with respect to the mobile's and written text messaging's mass success amongst youth, the following authors contribute an enormous wealth of explanations from the parents' side.

For the youth commencement phase, and only for that, which, up to the moment has been the hard core of mobile phone adoptions, the Norwegian author provides the interesting concept of the "digital lead". The term "lead" here must be taken in the purest, strictest "canine" meaning, i.e., the lead with which the master takes and controls his dog. This is the line of thought which can be seen in practically all the following articles: parents are those who mainly want the mobile for their child(ren) with the purpose of following, monitoring and controlling them in the purest *Orwellian* acceptation of "Big Brother". Richard Ling calls the mobile the "magic helper" who aids in monitoring the child's location. And, it must be said, that most authors claim that parents prefer to see the child calling from his/her room with the mobile rather than being out there in public areas where parents cannot monitor. The British author Leslie Haddon calls this the "*bedroom culture*", as against the outside-the-home culture. The mobile phone thus becomes the great, most useful monitoring tool, in the parent's eyes, especially when the latter are outside the home because of the script's requirements.... of work!

Parents want their small child to have a mobile phone so much that, in most cases, it is they who buy them, as we have just said. But it is interesting to note that, as the adolescent grows older, he chooses to pay the mobile expenses himself, with the parents' consent (particularly in the pre-paid rather than the contract version). Parents thus feel that their children are learning financial self-organisation and self-government, whilst they monitor and control them and children learn to exercise their freedom.

In this context, the Italian authors Fortunati and Manganelli speak of an obvious "aporía" or apparent contradiction existing, which they call a "pretence" whereby parents *simulate* control over their children, without achieving it (as the children socialise amongst their peers independently) and children *simulate* freedom from their parents, without achieving it (as they need their parents to subsist). And both are happy playing the false role on the Calderón stage of life.

THE NOT SO CRYPTIC NOR NOVEL TEXT MESSAGING LANGUAGE

The reader well knows that one of the most successful modes in the mobile telephone which is very heavily used by European and Japanese youth, is the possibility of text messaging, technically called in Europe SMS (See Glossary) and "I-mode" in Japan. It allows the possibility of sending 160 characters (letters and numbers), and costs scarcely 30 cents. Characters are entered by keying them into the 12 keys of the mobile phone's tiny alphanumerical keypad whilst the phone is held with the rest of the hand. Young people are masters in performing this quickly and well. They are "written language conjurers" as one author says in this magazine. The theory it is thus wished to present here is that novelty lies in the phone, but not in the

written language either of young people or of adults. Forms change, but the substantive of written communication remains.

It is recounted of Víctor Hugo that, when he had finished writing his epic novel *Les Miserables*, he retired to a farm but was anxious to know what success his novel was having amongst the public. So he sent a post card to his publisher with a laconic message: "?". The latter had no need for further *bits* of information, he perfectly understood Víctor Hugo's message and replied with another, equally concise: "!". The novel had been a complete success. There was no need for more characters to understand each other[6]. Therefore, brevity, abbreviation, is the rule rather than the exception. Hebrew does not use vowels in its writing. Short hand and stenotyping are algorithms of compression as powerful or more than the current "zips" in information technology. The English word "OK", though there are different versions of its meaning, indicates "*oll korrect*" (all correct, in old English), it compresses 10 characters into 2 (80%). The sign "&" for "and" is normal. The Morse language has the two most statistically used letters in English the "E" and the "T", as "." and "-", respectively, to facilitate quickness of transmission, and the universally known word for aid "SOS" is written in a form musically easy to remember as "...---...". The word "SOS" is not an abbreviation of anything, but a linguistic convention, which was ordered by the *International Radioelectric Convention* of 1912, only days before the Titanic sank, on 15 April.

Adolescents have used their own language in all ages, both for their diaries and to communicate with brothers and sisters and friends which, as far as possible, could not be understood by their parents. Hence the author of this article wrote the commencement of "El Quijote" (Don Quixote) in the language invented by and shared with his brothers and sisters: "TAEN TAUN TALUTAGAR TADE TALA TAMANTACHA"[7]. It is easy to guess its syntactic algorithm of privacy and ingenuity. But it fulfilled the mission of parents not being aware of what their children were talking about.

Table 6

Some examples of written language for notes taken in class, in Spanish, French and English

SPANISH		FRENCH		ENGLISH	
Abbreviation	Meaning	Abbreviation	Meaning	Abbreviation	Meaning
θ	-ción	º	-ion	θ	-tión
Tª	Temperatura	f	-phy	Asap	As son as possible
q	que	Ê	Être	$	Money
'	Plural	Bcp	Beaucoup	Soc	Society
Z	Zona	Qº	Question	n.a.	Non available
Bte	Bastante	^m	Même	W/	When
˜	Aproximadamente	Pb	Problem	C	Constant
vs.	Contra	vs.	Contra	vs.	Contra
/	-mente	W	Travail	Ind	industry
i.e.	Es decir	i.e.	C'est-à-dire	i.e.	That is
Prox.	Próximo	Svp	S'il vous plait	IT	Inform. Technology
^c	cómo	K	Capital ($)	Eco	Ecological
Xp	porque	Xq	Par ce que	Dvp	Development
Adm	Administración	Adm	Administration	Adm	administration
N.B.	Nota Bene	N.B.	Nota Bene	N.B.	Nota Bene
Ds	Dans	Res	Resource	dept	Department
T	-té	Gov	Gouvernement	Ty	Technology
M	-ême	Rel	relation	@	about
Ha	Historia	Hᵉ	Histoire	Hy	History

Source: Spanish, American, Senegalese and Canadian students for this article.

6. Told in Bengt-Arne Vedin (1994, 18).

There are ideograms also in large public areas (railway stations, airports, etc.) and on traffic signs, which are intuitively understood universally and univocally (advertising services, a restaurant, meeting points, no overtaking, platform step, danger, skidding on ice, danger of loose animals, etc.).
A lifetime of students have used, use and will use their own concise language full of abbreviations to take notes in class. See some examples in Spanish, French and English, expressly provided for this article by native university students in these three languages:

All western languages have their abbreviations, for instance, for "señor" and "señora" (Sr./Sra., M./Mme, Mr./Mrs), and profusely use mathematical symbols for non mathematical meanings:

= equal to
π different from
\therefore
≠ growth
Ø decrease
• infinite
> more than
< less than
S sum

to quote just the best known.
There is a whole internationally known symbology, the meaning of which is likewise known. Let a few examples suffice (Arribas et al., 2002):

- The hammer and the sickle
- The pacifist symbol
- The Swastika
- The Cross
- The Red Cross
- The compass and the set square
- The star of David
- The half moon
- The Dollar

Fortunately, in Spain there is a large variety of linguistic codes of expression in text messaging as in the rest of the countries. There is a certain consensus in some key words or expressions. Here are some picked out by the actual young people themselves interviewed by the writer hereof, placing those of an affectionate nature first:

Table 7

Main words or expressions most used by young Spaniards

Abbreviation	Word/Expression
tq	I love you
bss	Kisses
mk?	Do you love me?
hl	Hi
aptc	I feel like it
cnt	Answer
xa	For
xo	But
nt1d	I haven't a cent
jodt	Get stuffed
pdt	Forget me
npi	No bloody idea
clga	Mate

Almost all the authors provide the best known examples of SMS language, and the reader can see that the abbreviations are based on basic rules such as taking the initials of the phrase, using numbers that mean something (4 = "for") or phonetically imitate the phrase, ignoring the

Table 8

Ways of expressing "I love you " in the main languages

SMS Language	Meaning	Language
TQ	Te quiero	Spanish
Jtem o jt'm	Je t'aime	French
Ikvjou	Ik houd van je	Dutch
Hadili	Hab dich lieb	German
Tam	Ti amo	Italian
ILUVU	Te quiero	English
Ilu	I love you	English
Luv u	I love you	Russian (taken from English!))
Mrs	Minä rakastan sinua	Finnish
GID	Glad I deg	Norwegian

rules of spelling. This latter is what profusely shocks experts everywhere because of the fear of losing the spelling of a language and, therefore, national essence. Do not think that this only happens in Spain. The reader can see how complaints on the same topic are made in some other articles.

As an anecdote and since, as we have said, 70% of messages are affectionate in nature (see how to say “I love you” in the different languages) just as appears in the following articles:

Small dictionaries have been published in all countries to “help” young people to best use written messaging, as if they needed such a crutch, and web pages appear with the same content. Obviously, operators are the first to become interested in the phenomenon due to the fat profits it brings them.

Spain is no exception and some small dictionaries have been published here and are mentioned in the references at the end of this article. “The ABC of the SMS” in one of them, in the chapter entitled "QRS ABLR DPRSA?" explains:

Question marks? One suffices at the end.
What do you want the H for? It is used only in acronyms and in a few cases.
Accents? What’s that?
The vowels of usual words are surplus.
Use the sound of consonants (t=te; k=ka; kb=cabe)
If there are many consonants, you imagine the vowels (KDMOS?)
The CH becomes X (mxo = mucho)
The LL becomes Y (ymme = llámame)
Yes to the Ñ: the tilde is free (MÑN = mañana)
The signs and figures are worth what they signify or for what they sound like (salu2).
Golden rule: everything that is understood is OK.

A bigger slap in the face could not be given to the Royal Academy for the Language. But the act of communicating obviously exists, and humanity – especially the young one – will find new ways of doing so, by means of new codes. Nothing new under the sun!.

It simply remains to add that written messaging has, in general, the same realities associated as the mobile voice phone, but it also has some specificities which are shown above all in the article by Carole Anne Rivière, of France, which can be basically summarised in the even greater degree of privacy which the written message has, to the effect that it can be sent and/or received at no matter what time or in what place (young people value this possibility a lot as they can do it from the classroom, something which would be unthinkable using the voice). There are also other factors, such as the cheapness of the 30 cents which makes it more affordable to the precarious economies of youth.

CONCLUSIONS FROM THE SOCIOLOGICAL THEORY

It is now time to recapitulate on what was contributed by the authors, placing it into the context of the sociological theory. And the last section of the article will be devoted just to this.

Speaking of the mobile phone and before reading the articles or having carried out research on the mobile phone and youth, it might have been expected to see mobility associated thereto, and the latter to its first derivative, globality. In the end, something is mobile because it is global, or better still the other way round, something is currently global and therefore has to be mobile.

Hypotheses could have been made on the fact that the communicatability offered by the mobile phone could confirm the famous prophecy made by the human communication theorist Marshall McLuhan, in the early sixties, called by him the “global village”. The idea in the perspective of that time was to explain the coming world: a planet transformed into a village thanks to telecommunications.

The Spanish sociologist, Manuel Castells, in his now classic analysis of current society (1998) distinguishes the area of flows and the area of

places. The former has to do with globalisation, associated to the big well known processes of the new economy, monetary speculation, arms and drugs traffic, the great social media, etc.), and the latter, the not necessarily physical virtual area, of the family, of kinship and of friendship. Dertouzos (2001, 206) speaks of the urban villagers, i.e., of the compulsion to recreate the very ties of the village in the big city context[7]. But, the contribution of the research work of all the authors makes us see, at least in the youth context, that the prophecy is fundamentally wrong. What the cellular telephone is demonstrating is the emergence of a type of *local community*[8]. The human being clearly belongs to the animal species which lives in groups. Up till the industrial revolution and subsequent urban development, people lived particularly in villages where human relations were primary, face to face. These were the scenarios in which the physical or spatial boundaries coincided with the social ones, and where the time dimension of such contacts was absolutely synchronous and instant.

In the case of youth, particularly urban youth, a new type of natural community has emerged, i.e., that based on primary relations whose links are the nuclear family, kinship and, above all, friendship, at least theoretically. None of the three, except the family, share close areas. It is patently clear from the articles that the family and kinship are declining institutions for the young person, who sees himself, let's say, obliged, to reinforce the always extremely intense primary relations typical of youth since time began. The dimension of the face-to-face primary relationship was introduced by Charles H. Cooley in his book entitled Human Nature and the Social Order (1902). A long time after, in 1972, Dunphy published The Primary Group: A Handbook for Analysis and Research. And another classic must also be mentioned, Ferdinand Tönnies', Comunidad y Sociedad (1957).

What we are trying to say here is that, under this theoretical perspective, young people's communication via the mobile phone should be considered as an absolutely necessary tool to implement the compulsion of the primary relations of a community type. This plainly involves a return of the old local village, where there exists a profound need to talk to each other, within co-ordinates of synchronous times but in not necessarily distant areas. If small or great distances have never mattered to information and communication technologies (ICTs), they matter even less here.

It is also possible to explain the clamorous success of the mobile phone in terms of the classic sociological concept of socialisation (Parsons & Bales, 1955), as a never finished process whereby the individual exchanges cultural items (values, standards, habits, customs, beliefs, behaviours, etc.) prevalent in his social system. Four large socialisation agencies were considered: the family, the school, the social media and the peer group. What the research of the authors present in this magazine provides us, particularly the Italian article, is the decadence of the family institution as a socialisation agency due to the meagre size of the family (the only child who needs brotherhood/sisterhood and finds it in the mobile phone), the mother and father's long working hours (which force long hours alone at home on the children) and recomposed families, the fruit of separations and subsequent unions. Young people's reply of delving into the meaning of community, of a gang, in the old style of classic sociology emerges as natural from all this scenario (White, 1943).

The possibility of using the sociological theory of the role allied to the use of the mobile phone to interpret what the Italian authors call "pretence" whereby parents simulate control over their children without achieving it, and children simulate

[7] Dertouzos says: "Tribalism is a stronger human impulse than the whole of the current information technology capacity.

[8] See the now classic book of Maurice R. Stein, "The Eclipse of the Community " (1960) for an interpretation of American sociology on the concept of community, a book which McLuhan himself must, in all likelihood, have know.

freedom from their parents, without achieving it either must be emphasised. Remember the allegory of the Norwegian author on the mobile phone being the “lead” (in canine speak) for parents to monitor their children. Big Brother counterattacks, without completely achieving it. And the *hippy* spirit also, without fully achieving it either. That is one of the charms of the young people's mobile.

From the sociological theory of the family, the consequences of what is expounded in this issue of the magazine are very important. The small size of the family (one or two children), the growing number of working women and long working hours brought on by the new economy are causing lengthening times of loneliness at home amongst adolescents and young people which many fill with their mobile phone.

And from the theory of communication, it is also possible to analyse the peculiar ways in which young people relate to each other, to strengthen the feeling of belonging to a group and once more emphasise that the written form of relationship through the SMS is not a novelty at all despite all the media writings on the subject.

To synthesise, let us say that the mobile phone (in its duel voice and written messaging versions) is not used by young people as a mobile device but as a personal, private, local device for predominantly affective uses. Adolescents are initiated by playing, then writing and end up talking. These are the three stages of the reality of communication.

This article must end by mentioning an extremely interesting idea in the article by Virpi Oksman and Pirjo Rautiainen, the Finnish authors, to the effect that the mobile phone phenomenon has been taken seriously in Finland and thus the authorities and several institutions are drawing up criteria and training courses for teaching how to use the mobile phone ethically, just as society provides institutional means for driving a vehicle so as to learn how to do so properly. There they have understood that the mobile phone phenomenon is

“more than a fashion” – the title of this article – and “more than a telephone”, the title of the German article.

'I'VE GOT MY WHOLE LIFE IN MY HAND"
Mobile communication in the everyday life of children and teenagers in Finland

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The article presents a research carried out in Finland, in which the telephone culture is undergoing a rapid and deep change, and with differential traits whether it is among teenagers or adults. Among the former, the phone has become an essential and natural element of their everyday life, a means to organize their daily lives with a communication style which is proper and fit to their needs, and at the same time is a means to build up their social reality. The phone helps them to define one's unique space in terms of their relations to others and in terms of their relation with the technological world. For adults, hoever, their interest lies in questions of price and globalization, while having little importance the culture of the mobile phone.

Key words: Mobile phone, GSM, SMS, text messagerie, information and communication technologies (ICT), information society, youth, socialization, communication, primary group.

Introduction

> "I've got my whole life in my hand, in my mobile. It's very important to me and I take good care of it. I save the most important text messages, for example a text message my dad sent me three minutes after New Year. I usually bomb[1] my parents and then they call me back. I don't see my dad that often, but sometimes he calls out of the blue and asks how you are and so on. My big brother sends me these pretty zany messages sometimes and we often get a good laugh out of them if I'm out with my friends. And I'm in touch with my stepsister a lot through the mobile phone".

In this quote, a 16-year-old girl describes the mobile communication taking place in her patchwork family. For young people in Finland, the mobile phone has become a natural, fixed, stable part of daily life, life management and maintenance of social relationships. During the last few years, a general mobile literacy has developed among teenagers: the young consider mastering of the technological and communicative skills of mobile telephony as something that has come to be required of citizens in the information society. The phenomenon can be viewed in connection with a larger norm of technology mastering. The attitude to the device itself has changed: the status symbol of the early years has been transformed into a tool for organising everyday life, a standard accessory of all citizens and an expression of personal style and way of life.

The extent of the Finnish mobile phone phenomenon has attracted wide international attention. The way Finnish teenagers in particular use the mobile phone has become an object of keen interest. The expansion of mobile phone use to younger age groups began in 1997 as new, inexpensive mobile terminals came onto the market and mobile operators introduced more competitive

[1] Bomb calls are signal calls where the caller hangs up before the recipient has time to answer, thus leaving information on both the caller and the number of calls in the mobile phone's memory.

prices for their services. The number of SMS messages sent during the first two months of 1998 was sevenfold those of the preceding year. The same period saw the number of existing GSM subscriptions double (Kopomaa, 2000: 56). Teens have been quick to adopt the mobile phone into their lives. The penetration level of mobile phones in Finland is one of the highest in the world, and young people are no exception to this. In the year 2000, 85 percent of Finnish households owned at least one mobile subscription (Ministry of Transport and Communications, 2000). According to a study by the Pori School of Technology and Economics, 60% of children aged 9 to 12 own a mobile phone. Among 13- to 16-year-olds, the figure is close to 90%. The phenomenon is by no means exclusively urban: regional differences in the distribution of mobile phones are relatively small. Socioeconomically, the phenomenon encompasses the entire population.

As a new phenomenon in culture and society, children's mobile communication in particular raises a variety of questions concerning areas such as the suitable age for acquiring a mobile handset, child rearing, use of mobile phones in schools and the child's relationship to the device, to mention but a few. In the year 2000, it was common for mobile phones to be acquired for children aged 10 to 12. According to the City of Helsinki Urban Facts, every third 10-year-old in the Helsinki area owns a personal mobile phone (Kvartti 2000/4).

The Information Society Research Centre (INSOC) at the University of Tampere has been mapping the mobile communication of children and teenagers since 1997. The study is being carried out in co-operation with Nokia Mobile Phones, Sonera Mobile Operations and Tekes. Research is divided into two thematic entities: the mobile communication of adolescents (13 to 18 years of age) and children (under 13 years of age). Researchers have been using applied media ethnographic research methodology since the year 2000. Media ethnography observes the use of media in a sociocultural context (see Morley, 1986; Silverstone, 1994). The main emphasis is on observation and qualitative thematic interviews of children, teenagers and parents. Interviews focus on the presence of mobile communication in the daily lives of children and teenagers: purchase of the mobile phone, its use and significance in life. Teachers and other people working with teenagers were also interviewed. In all, nearly 1 000 interviews were conducted throughout Finland. Teenagers themselves have observed their communication environment in media diaries they have produced for the research purposes. The material also contains pictures taken at various youth events, children's drawings of 'fantasy mobiles', field journals by researchers and an SMS archive, which in autumn 2001 comprised nearly 8 000 messages.

The multimedia generation

> "You could say my mobile communication day starts in the evening as I usually set my phone's alarm to wake me at seven o'clock. I wake up in the morning and turn off the alarm and check if I've got any messages. The sound is off at school. I may sometimes have messages or calls from my parents or someone. I check them. And call them back. In the afternoon, I have the sound on. That's when I get most of my calls and messages. For instance, someone may ask where I am at some point: if a friend's downtown, they may ask whether I could see them. Then if mom, dad or my sister need to talk to me, they call and things like that. (17-year-old boy)".

In the quoe, a 17-year-old boy speaks of his mobile day: the mobile phone's role as a natural part of everyday life would seem evident. There was certainly some amount of 'mobile hype' a few years ago, when the mobile phone was still the number one topic of conversation and functioned as a teenage status symbol. Some teenagers carried the mobile phone visibly, attached to their waist with belt clips, and comparing different makes and models was common. The novelty has worn off since then, and today the talk is on content: text

messages, logos and ringing tones. At the same time, 'Web talk' has replaced 'mobile talk' to a certain extent: the young talk about interesting Web pages and compare home pages.
The use of the mobile phone in young people's lives is linked to the use of other ICTs. Teenagers often move fluently between different new media when communicating or looking for information. It should be noted that new media is not really new for today's adolescents (Drotner, 2000, p. 167). For the newest generations, mobile phones and the Internet have always been there, and young users rarely rate media based on how long they have or have not been available. Instead, teens are skilled at choosing the appropriate media for the time and place and base their choice on the length, significance and level of privacy of the message.
The concept of new media can thus be considered as generational. The division between new and old media also depends on the context and may in some cases be a somewhat artificial construction (see Suoranta & Ylä-Kotola, 2000, p. 159-160).
Research material would seem to indicate that the young display hardly any ideological opposition to mobile phones. As the proliferation of mobile ownership among teenagers has continued, principled opposition on the part of parents seems to have decreased. Teenagers with no mobile phone of their own usually use their friends' and parents' mobile phones and thus acquire general mobile literacy. An aspect of technological determinism is visible in teenagers' thinking: many subscribe to a view according to which the new generation must keep up with developments in technology.
Technological determinism and fears of technology -perhaps more amongst girls than boys (see Oksman, 1999)- are in most cases directed to computers and their development. Though a girl may have years of experience in using computers, she may retain the impression that she has still not mastered this use.
Conversely, mobile communication devices are seen as a technology that is very humane and easily approachable. For teenagers, the mobile phone appears as an everyday object that may even possess certain human characteristics: it is, after all, the gadget that enables the owners' social network to be continuously present on-line.

Characteristics of teenage mobile communication

Teenagers' use of mobile telephony has a number of special features that distinguishes it from the way adults us the mobile phone. Activities such as extensive use of text messaging, bomb calls and mobile games are essential ingredients in the adolescent mobile culture (see Kasesniemi & Rautiainen, 2002). Personalising the mobile phone through ordering ringing tones and altering the appearance of the phone is also typical of teenagers. It should be remembered, however, that teenagers are by no means a homogeneous group in their communication habits. Different lifestyles and ways of life shape mobile use, as do different life stages. As the young person gets older, communication patterns start to become differentiated, and the process of becoming independent also brings about a number of changes in communication (Oksman & Rautiainen 2002a, 2002b).
The mobile phone functions as a versatile communication device as well as a useful object of everyday life, such as an alarm clock or a calendar. Teenagers primarily use the mobile phone to organise their everyday lives and to maintain social relationships. 'It's made it easier to deal with a lot of things, obviously. When you have to get in touch with friends, for example, and you've got no idea where they are. So it's an important device in that sense' (Boy, 16). The most common subjects in a teenager's communication with the family are agreeing on rides to leisure activities and coming home times. Parents think that messages should be short and concise. Teens, however, want to express the

whole spectrum of emotions. Furthermore, according to adolescents, parents do not master the verbalistics of SMS, the emotional cues imbedded in the vocabulary or the use of special characters. A mother relates: 'I noticed I tend to call rather than write messages. Text messages to children are mostly instructions, advice and schedules. I often rang rather than sent a message'. This can be seen in SMS from a mother to her 14-year-old daughter: 'Call mom right away and the phone has to be switched on like you promised.' Care for others is another central theme in internal family communication. Mother working on shifts to daughter: 'Good morning, are you up yet? mom' (8:45) and receives the answer: 'Yep I'm having breakfast. Jonna'. (8:50)

For teens, the most important thing in mobile communication remains building up and maintaining their social networks. Communication for this purpose utilises the entire spectrum of affective communication: 'My boyfriend sends me text messages pretty often. Not poems or anything, but romantic stuff' (Girl, 15). Especially when forming their first relationships with the opposite sex, teenagers consider SMS an excellent medium for communication. They first start to explore the possibilities: finding out if the other person is interested. This is done by means of humorous messages, chain letters and bomb calls. The intimate content of a message is often moderated with a smiley, which can act as a social escape - I was only kidding. Little by little, the messages get more personal and the actual relationship can start with a message: 'I just haven't been showing my feelings for you…you've been wonderful!!!I love you…think I might have a chance with u sometime?' (SMS from 15-year-old boy to a 15-year old girl). Mobile communication is often very hectic in the beginning. The aim of this active messaging is to get to know each other. In SMS, even a shy teen may write about things he or she would not otherwise dare to say.

Safety line

The parents interviewed had usually begun to consider purchasing a mobile phone for their child at the age where the child's living environment starts to broaden outside the home: the child begins school and the significance of hobbies and friends increases. Parents interested in new technologies are more likely to purchase a mobile phone for a child, and, having bought a mobile phone for their child, may perceive themselves as pioneers in the development of technology. The child's precociousness is often given as a reason for the purchase: a 'mature child' can be trusted with the responsibility of carrying the device and looking after it.

Parents may consider it their duty to raise their children to become 'mobile citizens'. Mastering the use of the mobile phone and other ICTs is believed to prevent social exclusion and to guarantee future status as a full-fledged member of the information society.

> "Hmm, let's say that in my opinion, it's good for the child to learn how to use computers, as computers are used pretty much everywhere, and it's taught in school, too, and you can get all sorts of information from there if you want, and know how to get it. (Mother).

In the daily lives of families, the mobile phone constitutes a 'safety line' between the child and the parents. Parent-child mobile communication is not very significant in quantity; it is the opportunity for contact that is valued. Parents emphasised the safety aspect in the use and purchase of the phone. Guaranteeing the child's safety was considered the most important reason for acquiring a mobile phone for the child:

> "That's modern life for you. I suppose it's being able to reach the children more easily. And avoiding those situations when you're sick with worry because nobody's answering at home, and my husband calling me at

work, asking do I know where they are, and both of us being far away. So you tended to think about things like that a lot. So perhaps that'll ease up now, the dreadful worry about where the children are when we're away from home. (Mother).

Most parents feel the need to maintain contact with their child, especially when face-to-face interaction is impossible. The opportunity for contact afforded by the mobile phone reinforces a sense of security: every family member carrying a mobile phone with them creates an awareness that in every situation the others are only a phone call away. The mobile phone was seen as a small investment for the child's safety.

I'm willing to put some money into that: if the mobile's lost, you can always get a new one, but if you lose your child there's no way to get them back. So you can't really measure it in money. (Mother)

After the purchase decision has been made, mobile communication between children and their parents is seen in a very positive light. According to researchers Timo Kopomaa and Pasi Mäenpää, who have studied the Finns' use of mobile telephony, the mobile phone is generally associated with efficiency in the use of time and organisation of social relationships. The mobile phone has made it easier to arrange matters related to both work and leisure (Kopomaa, 2000, p. 123-124, Mäenpää, 2000, p. 143-145). New family situations such as divorce, stepfamilies and single parenthood pose demands for the organising of everyday life. The mobile phone is used to facilitate the balancing of work and family: connection to the child remains intact even when parents are away from the home. The mobile phone is most actively used when the child is home alone after school. Calls made by children to parents typically deal with everyday matters: 'Can I have some ice-cream, mom? Can I go out to play?'

A question posed in some of the interviews on how, generally speaking, parents perceived the relationship between the mobile phone and child rearing prompted a powerful defence reaction. Parents emphasised that they were not 'mobile parents' meaning that they had not purchased the child's mobile phone to legitimate their own absence. In other families, parents associated 'mobile parenting' with skills in organising everyday life and caring for children: 'Mobile mum, I suppose that's me, then (laughs)' (Mother).

Tweenies in mobile fever

In the year 2000, the children interviewed frequently described the mobile purchase as an event with an element of surprise in it: 'It was a bit surprising really, dad just came in and said: "Here's a mobile for you"' (9-year-old girl). Unlike teenagers, children rarely initiated the purchase of the mobile phone. One year later, it emerged in the interviews that 10- to 12-year-olds had begun to see the mobile phone as a 'must have accessory' and kept asking their parents for one. Children's wish to get their own mobile was based on mobile fever in most cases resulting from peer pressure: children become interested in the mobile phone as an object because everyone else has one: for example, there are entire school classes where everyone has the same model.

It's significance is probably a little different to her than it is to us. Miira wanted it because her friend Janina has one, not so much because she wanted to call us with it. And we wanted her to have it so we could reach her. (Mother, 9-year old girl)

Use of the mobile phone by children under 10 years of age is regulated by various rules and is as such not yet independent: permission from parents is required for making a call and parents commonly read children's text messages.

"Jenna comes up to me to say she has got a text message, and then we see what it is

together. (Mother of 9-year old girl) Attitudes towards children's mobile phones are more pragmatic than before. Now, moral opposition only appears in isolated cases. At present, parents are most concerned with issues such as what would be the right age and life situation to acquire a mobile phone for a child. 10- to 12-year-old children owning a mobile phone is no longer seen as an unusual phenomenon that requires an explanation.

According to Ito, the consequence of the small size of Japanese homes is that young people have very little private space at home. As a result, young people frequently take to the street to socialise. The mobile phone would appear to respond to the Japanese teenagers' need for more privacy in their relationships with parents (2001, 5). Similarly, Finnish children approaching adolescence display a need for 'own space' and private communication: one mother related how her 11-year-old son calls girls and receives calls from girls on his mobile: 'His bedroom door is shut whenever his mobile rings.' The mother is of the opinion that the child's mobile phone constitutes private territory and thus refrains from investigating the contents of her children's mobile phones.

"I haven't looked at it, for me that would be pretty much the same as if I'd go about reading my kids' diaries in secret. I think it would be pretty low". (Mother of 11-year old boy).

Some children are very interested in the mobile phone as a device. For under 10-year-olds, the most interesting feature is frequently the worm game. Some of the children in this age group are hardly interested in the mobile phone at all, and their attitude towards the mobile phone is rather indifferent. After the initial excitement, the child may, for instance, forget to take the phone along when going to a friend's house: Pokemon cards would not be as easily forgotten. Mobile communication in itself is too abstract for children this young, and they see the mobile phone more as a game machine. In the world of a small child, the position of mobile communication is not as central as it is with tweenies and teenagers.

She's really no good at answering the phone, she can't hear it ringing. In the afternoon children's club, for example. It's awfully noisy and you can get five phones ringing at the same time and no one really pays any attention since they don't know whose bag the sound is coming from. (Mother, of 9-year old girl)

The relationship of children and teenagers to mobile communication and to the mobile phone as a device becomes differentiated with age and according to personal preferences (Oksman & Rautiainen 2002a, 2002b). Though mobile phones are currently owned by children under 10-years of age, children's mobile communication remains very private in nature: parents often instruct children not to show off the phone or use it visibly in school or other public places. The mobile communication of under 10-year-olds is usually directed to the family: its primary function is to serve as a line between the child and the parents.

After acquiring a mobile phone for their child, parents frequently expect the child to adopt the communication skills and habits of adults. Children's communication does, however, incorporate a number of characteristics that also apply to their use of the mobile phone. The non-verbal aspect of communication is highlighted: children commonly use facial expressions, gestures, body postures and movement to express themselves (see Wood 1976, for example). The time perspective of children is shorter than that of adults, and children usually require immediate feedback for their communication. In addition, the unaffected style of communication characteristic of children may sometimes appear puzzling to adults.

"He can call about the most curious things, on the spur of the moment, things that he

finds important. Like finding his keys. (Mother of a 9-year-old boy)".

"In the beginning I got quite a few calls saying I'm waiting for the bus, mum, bye then. I'm sitting in the bus now, mum, bye then. I'm walking towards the music school, bye then. They've got less now". (Mother of a 11-year-old girl).

The child's independent interest for mobile communication usually emerges in their pre-teen years, between the ages of 10 and 12. Mobile phones are discussed with friends in much the same way as fashion and popular culture. Empty text messages as a means of teasing people and various types of bomb call games are examples of pre-teen communication culture. An 11-year-old girl describes the communication culture of her age group:

"We send messages like: 'What are you doing now?' 'How are things?' Things that are completely brainless. You can send a message like: 'Does your foot hurt, is your toe sore?' Or one that says 'Brilliant' and then the rest of the screen is just exclamation marks. Then you get one back asking what was that about. I also ask my friends about who they fancy and things like that. I send quite a lot of messages to boys from my class as well".

ALGUNOS EJEMPLOS TÍPICOS DE ABREVIATURAS

En Finlandia los jóvenes usan muchas abreviaturas, como en el resto de los países donde se ha desarrollado mucho el SMS. Algunas son tomadas del inglés, por su concisión y cortas palabras. He aquí unos cuantos ejemplos, tanto de las abreviaturas tomadas del inglés como del finlandés:

Abbreviation	Local meaning	English translation
In English:		
CU	See you	
LOL	Lot of love	
MSD	My sweet darling	
In finnish:		
MisO	Missä olet?	Where are you?
AL	Akku loppuu	The battery is running out
EOS	En osaasanoa	Can't tell you
ET	Ei todellakaan	Imposible
EVVK	Ei vois vähempää kiinnostaa	Don't give a damn
EVY	En voi ymmärtää	Don't understand
HIH	Hihitän itseni henglilitä	Laughing to hell
HK	Henkilökohtainen	Personal
HY	Hyvää yötä	Good night
JKS	Järjen käyttö sallittua	Common sense permited
MRS	Minä rakastan sinua	I love you
MiSuMe?	Miten sulla menee?	How are you?
TMY	Tule meille yöksi	Would you come home for staying overnight?
TT	Terkkua tutuille	Greetings to everyone
Vst	Vastaus; Vastaa!	Answer; question
AUN	Älä unta nää	Please dream!

Conclusions

The mobile communication of children and teenagers is an interesting research subject that is in a constant state of flux. The mobile phone has various meanings in the everyday life of children and teenagers. For teens and 'pre-teens' the mobile phone has become an important and natural part of everyday life and the mobile phone functions both as a device in organising everyday life as well as a means to build social networks and define one's own personal space in relation to others.

When studying children's relationship to the mobile phone, it should be taken into account that children are not little adults or small teenagers, but have their own styles of communication as well as needs and ways of thinking particular to them. So far, research on the information society and the social implications of technological development have highlighted macro-level dimensions: issues related to the economy and globalisation have gained most attention. Empirical knowledge highlighting the point of view of families with

children remains relatively scarce. As the immediate environment of children is being technologised, the need for information on the interaction between the child and the surrounding technological world becomes increasingly important. Cultural beliefs subscribed to by many parents are not enough to describe the variety of meanings and roles technology has in the life-world of a child.

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ADOLESCENT GIRLS AND YOUNG ADULT MEN: TWO SUB-CULTURES OF THE MOBILE TELEPHONE

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Este artículo presenta los resultados de un estudio realizado en Noruega centrado en la repercusión del teléfono móvil en dos colectivos, el de las chicas adolescentes y el de los hombres adultos jóvenes.
Para el primero, el teléfono móvil ha supuesto además de un factor de socialización, en la medida que ha representado una facilidad para comunicarse sus miembros entre si, un medio de emancipación respecto de sus padres. Por otra parte, ha servido como un modo de definir la identidad de la adolescente tanto individualmente, a base de personalizar el aparato en diversos modos, como colectivamente creando un lenguaje especial del grupo, al hacer uso del servicio de mensajes cortos SMS.
En cuanto al segundo colectivo, el factor de socialización se contempla en el sentido de que el teléfono móvil ayuda a mejorar la posición dentro del grupo social, si bien, se observa una cierta despreocupación por la cultura de la telefonía móvil y un amplio uso de la comunicación de voz y escaso uso del SMS.

Palabras clave: Teléfono móvil, GSM, SMS, Mensajería de texto, tecnologías de la información y de la comunicación (TIC), sociedad de la información, juventud, socialización, comunicación, grupo primario.

Introduction

This paper will look into two cultures of types of mobile telephony, specifically the role of the device among adolescent girls and young adult men in Norway. The introduction and adoption of the mobile telephone has led to various adjustments in a range of social institutions. Among the effects is that it has changed certain aspects of existing sub-cultures and also brought other aspects more clearly into focus. The two groups mentioned above have been particularly enthusiastic mobile telephone users. The mobile telephone has meant that each of these two groups finds itself in a characteristic life phase. Individuals in these groups have learned to use the device to carry out tasks that are central to their needs in these life phases.

Adolescent girls' are in the process of establishing themselves as individuals who are independent from their parents and, at the same time they are testing their legs vis-à-vis social networks. This analysis shows that the mobile telephone is a tool in this work. It allows one a communication channel free from the supervision of one's parents, the opportunity for individualization and the ability to engage in social networking with one's peers.

Young adult men also can be seen as a group that has generally adopted the mobile telephone into its everyday routines. As with the teens, the device facilitates coordination in a nomadic period of life. However, unlike the adolescents, this group is not as focused on emancipation as it is on the work of establishing careers, finding mates and managing one's social life. Thus, the mobile telephone is a logical tool in these activities.

To say that there are cultures of mobile telephone points to the notion that this analysis is not only an examination of ownership and use. Rather, I am also interested in looking at the embedding of the device in the broader life situation of these two groups. In the following section, I will give a short overview over the methods used and look into

some of the context in which these two groups find themselves. Following this, I will look into the actual data that makes up the basis of this paper and finally I will summarize the material and draw some conclusions.

METHOD AND BACKGROUND

Method

There are two major sources of material used in this analysis. The first is a series of surveys conducted by Telenor R&D[1] on the ownership and use of mobile telephony among teens. This series of surveys began in 1997 and has been done annually since then. The latest survey was carried out in May 2001. Each of these surveys is based on a random sample of Norwegians of approximately 1000 informants who are between 13 and 20 years of age. The latest installment in this series also included a random sample of persons from all age categories. The analysis of the young adult males is based on this material.
The second general source of data is Statistic Norway's[2] media use survey, particularly the latest version from 2000. Telenor is a partial sponsor of this survey. As with the previous data source, there are approximately 1000 cases in the database. The respondents are a random sample of the Norwegian population.

Background

When looking into these two sub-cultures, general questions include: Why has the device been adopted and used by these groups? What is it about their social situation that makes them receptive of the technology?
There are several threads to examine here. Theses include the social situation of adolescents generally and, adolescent girls, specifically. In addition as we will see, young adults, and in particularly young adult males are a particularly active user, group. In order to address the questions posed above it is worth taking a look at their social context.

Adolescent girls, social network nurturance and emancipation

Adolescence and emancipation

Turning first to the situation of adolescents, an important issue in their lives is the process of emancipation from their parents. It has been noted that adolescence is a phenomena associated with industrialization. It has, in some respects, replaced the more specific rites of passage as a well-defined point in time and given us an extended period wherein the child matures and, in a sense, gains their sea legs as an adult. During adolescence, one acquires an increasing sense of him or herself as an independent social actor. In addition, there is a strong emphasis on the same-age peer group as a source of reference. Thus, the role of the parent is slowly, and perhaps fitfully, replace by an orientation toward one's peers (Hogan 1985).
During adolescence the peer group is central. Previous to adolescence one's parents and family are the dominant social focus. During the adolescent years peers are central to the individual's social world. After one has moved into the upper reaches of the young adult period, the family of procreation slowly encompasses the individual and demands attention that was once monopolized by peers (Rubin 1985).
While the family of orientation is important in that it provides the individual with a foundation, one's participation in the adolescent peer group allows one to test out other areas of our lives. Adolescence provides one with the opportunity to, for example, develop an understanding of personal economy, the dynamics of the workplace via various part-time and later full-time jobs,

1. Research and Development, and it is the subsidiary firm of the dominating operating company in Norway. Telenor R&D is devoted exclusively to marketing research and new product development.
2. Statistic Norway is a governmental body devoted to production of Statistics in Norway.

interaction with alternative cultures and alternative life styles, and last, but hardly least, adolescence is that period when one's understanding of sexuality and interactions with the opposite gender are put most firmly into place. Perhaps most importantly adolescence and peer groups allow one to experience making decisions and controlling situations in a way that the more authoritarian family structure does not allow. Thus, one can be a part of establishing a clothing style, deciding which films and music are cool or participate in coining phrases that help to identify group membership in a way that is not possible within the family.

Another issue here is that the dynamic nature of the world means that adolescents often experience situations that were unimaginable to their parents. Modern communication and transportation systems, and in some cases even more basic services were not available to the parents and grandparents of contemporary children. It is, for example not unknown to find elderly persons who grew up in rural farms without telephones, television or perhaps electricity. Thus, today's adolescents grow up in a far different material world than that of their parents or grandparents. In this situation, the experiences of parents and grandparents only partially fits the world that the adolescents confront. Unlike the experience of becoming an adult in a traditional society, knowledge is not simply received rather the individual is more active in the process. Thus the individual is active in determining what knowledge is of use to their own generation in a way that is not possible in traditional societies. Glazer and Strauss speak of "shaping" transitions in this context (1971, 57-88).

Here again one can see the role of the peer group in aiding the individual through the transition from child to adulthood. The peer group shares one's and can aid them in developing an ideology that makes sense to the individual. This nascent ideology, however, can be at cross-purposes with that of their parents who may even see certain topics in strongly moral tones. Adolescents can be at pains, it seems, to employ various styles and jargon in their self-definition that clearly mark the boundary with the older generation (Cunningham and Lab 5; Davis 1985; Dichter 1985).

Women and their social ties

The discussion has looked into why the peer group is of importance to the adolescent. Now I will look into the gendering of this phenomenon. Beyond simply being an arena for the establish of a separate identity, adolescence is also a time during which the individual engages in a type of pre-socialization for the roles that they will eventually come to fulfill later in life. These roles are, in some respects gendered. To explore this, I will leave the subject of adolescence for a moment to look into how mature women function in social networks. Research shows that women have a central role when it comes to maintenance of the social network. One can go so far as to suggest that to study social networks is to study the significance of women's contributions (Ling 1998). This has several dimensions. To name a few, it has been noted that kin keeping is commonly a gendered activity, and women are central (Wellman 1992). Women's social networks are larger (Cochran et al 1993, 90) and more complex (Moore 1990) than those of men.

Women's (and by extension adolescent girls) participation in social networks has a cost in that they are called upon for unreciprocated nurturing (Di Leonardo 1987, 442, 447; Ross and Holmberg 1990; Wellman and Wortley 1989). This task is taking on increasing importance in a society where one is often faced with increasing individualism. The effects of divorce, dual careers, fewer collegial job relationships etc, mean that the bonds holding the family and the social group are becoming more important (Putnam 1995). Thus the rituals and celebrations that build this fiber, i.e. birthdays, anniversaries, the provision of moral support, retelling family history, maintenance of local histories etc are all involved. Again, it is women that often take the lead here (Berger and Kellner

1964; Di Leonardo 1987, 443). While there is a burden involved in participating in social networks, there is also an advantage enjoyed in that women have a broader group of friends and relatives upon which they can draw for emotional support (Rosenthal 1985; Wellman 1992, 99).
In the work, and pleasure, of social networking there are several tools available. The most central of these is communication. It is, after all, through talk and correspondence that social networking is carried out (Krogh 1990; Rakow 1992). Analysis also shows that women often have more completely developed communication skills. Women are better, for example, at the strategic introduction of topics of conversation and they can employ rhetorical and factual questions to maintain conversation and indicate interest (Fishman 1978; Treichler, P.A. and Kramarae, 1983). Women are more accomplished at adjusting the tempo of the conversation and adjusting to the shifts of topic (Sattel 1976). Women also master the use of "back channel" communication, i.e. the interjection of grounding devices such as "mm" and "yea" and the use of body language in conversation better than men (Sattel 1976 see also Clark and Brennen 1991; Clark and Marshall, 1981; Clark.and Schaffer 1989; Duncan 1972, Johnstone, Berry and Nguyen 1994, Kendon 1967, Saks, Schegloff and Jefferson). These strategies are used in the development and maintenance of communication channels (Imray, L. and Middleton, A. 1983, Jones 1980 194; Rakow 1992 see also Gluckman 1963, Tannen 1991).
While the findings cited here apply generally to women, adolescent girls are involved in their socialization into the role described here. As noted above, adolescence is a time in which the child is engaged in the establishment of their own identity, some times in the form of a revolution against the world of their parents. At the same time, teens are also engaged in the assumption of their eventual adult positions in society. For adolescent girls, this may mean developing the networking and nurturing skills, often within the peer group, that will eventually be applied within the family. We will return to this theme in the analysis of the data and also in the conclusion of the paper.

The culture of young adults

Now I will turn to the second general issue here, i.e. the context of young adults. While adolescence seems to be the product of industrialization, the period of being a in the sense of an extended period of life where one lives independently and does not start with the establishment of a family or the acquiring of substantial economic responsibilities seem to be a child of the 1980's. Frønes and Brusdal refer to this as the young adult life phase (2000). As we will see below, this group has a unique relationship to the mobile telephone.
Recent history has provided us with several groups of young adults that have given rise to comment. The flappers[3] of the 1920's, zoot suiters[4] of the 1940's, beats[5] of the 1950's and finally the hippies of the 1960's and 70's were all cohorts – sometimes narrowly defined within racial boundaries – that arose from more or less specific historical contexts. The clearest example is the hippies who came out of the general ferment surrounding the Vietnam War. After their moment in the sun, these cohorts take with them some of the baggage from the period and moved into more traditional roles of parents, family members and workers. The culture and the artifacts of the period however have not often developed into a general life phase.
One may be able to assert, by way of contrast, there now seems to have arisen a life phase that it is not the result of a specific event, like the baby boom or the resistance to the Vietnam War. Rather, it is the result of a broader social dynamic. It is clear that this nascent life phase does not carry the same degree of crystallization as that of, for example adolescence or old age. None-the-less,

[3] The flappers are the hippies of the 20's. It is the type of people that wander about F. Scott Fitzgerald's novels.
[4] Zoot suiters is a kind of dressing of a male minority of the early 40's. Malcom X was a "zoot suiter" up until his conversion to the Islam.
[5] Jack Karouac, Allen Ginsberg and William S. Burroughs.

one can speculate that it is gathering the trappings of a self-generating life phase through which young adults will generally pass on their way to a more mature life stage.

Thus, since the 1980's individuals experience a period of young adulthood. The period is loosely associated with the conclusion of obligatory education and an extended period of individual living that is previous to the establishment of a family and the serious pursuit of a career. The individual is given the chance to seek out various alternatives, both in terms of work, the pursuit of recreation, travel and in terms of partners. There may be – more or less – periodic education that is pursued between forays into the working world. The ability to pursue advanced education and – particularly for women – the ability to control fecundity are developments that have opened up this possibility.

It is wrong, however to think of only students in this situation. Rather, a whole set of institutions and alternatives exist which also allow non-students to participate in this life phase. Institutions such as, of course, the university and governmental student loan programs are central. Beyond this however, there are the institutions surrounding a type of café society wherein one can maintain a relatively relaxed relationship to long-term responsibilities. These institutions support this life-phase.

In its ideal form, one leads a relatively nomadic lifestyle. There are a range of jobs available in the service industry that are not particularly career focused and that allow easy entry and exit. When it comes to housing a well-developed rental market of apartments, sometimes even focusing on young adults and excluding families with children[6], are available. In this way, one does not encumber themselves with economic responsibilities while also having access to a society of similarly situated persons. In a similar way the choice to put off eventual child bearing also opens up possibilities here, though this choice is more common for men than women[7]. Instead of purchasing a home one moves from apartment, again allowing for the more nomadic lifestyle.

Beyond concrete institutions, there is also ideological support provided by various types of TV programs such as Friends and Steinfiled and books/films such as The Diary of Bridget Jones[8]. These programs and films play on an existing social group while also contributing a – perhaps somewhat unrealistic – image of how young adults should live and manage their lives.

Thus, there seems to have developed a life phase associated with but not limited to the educational society. This life phase is not simply students who otherwise would be establishing themselves both in carriers and in familial roles. Quite the opposite, it is a broad group of persons who have given rise to a set of institutions and have defined a culture that both supports and also defines their life style.

Technology's role

A quick review of the material presented above indicates two general tendencies. First, there is the argument that adolescent girls are in the process of both emancipating themselves from their parents while at the same time carrying out a type of pre-socialization into their eventual roles. In addition, I have identified another group of persons who are slightly older and have emancipated themselves from their family of origin but who have not yet settled into the traditional career and familial paths.

Against this backdrop, we have seen the development of a range of interactive communication technologies (ICTs). The question then arises as to how these various institutions integrate with each other. The adoption and use of

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6. Obviously, the author speaks of a situation somewhat idyllic in Norway that can't be said of other European countries.

7. Analysis of European data shows that women in the 22 – 35 year old age group are more likely than men to live in a home with a child (Mante-Meier et al 2001).

8. *Friends is a TV program that has to do with a group of young adult single men that live in New York. It belongs to the light comedy style. Steinfield is another TV program about again another group of young single men, and it is also light comedy. The Diary of Bridget Jones is a book, later on issued on a movie, bout a young single woman in London, and again is a light comedy.*

ICTs have resulted in the reorganization of pre-existing routines and institutions. (Bijker 92; Bijker, Hughes and Pinch 1987; Haddon 1992; Haddon and Skinner 1991; Silverstone 1993; Silverstone 1994). Beyond the reformulation of existing institutions, these technologies can also be seen as types of social institutions in themselves (Berger and Luckmann 1967). They can be used in order to coordinate interaction in new ways (Ling and Yttri, forthcoming), using new forms of language (Baron 2000). They can also be used in their physical form as markers of the peer group (Ling 2000).
In the following section, I will look specifically at the adoption and use of one technology, i.e. the mobile telephone, by adolescents and young adults. Based on this analysis we will begin to see how the social context of the individual and the technology have joined to, in some cases form new social institutions and ways of interacting.

THE OWNERSHIP AND USE OF MOBILE TELEPHONES

Given the background, I now turn to the analysis of the actual data describing ownership and use of mobile telephones among adolescents and young adults. I will first examine adolescent and then young adult ownership patterns. This will be followed by an analysis of their use of the device.

Ownership of mobile telephones

Adolescents

The general adoption rates for adolescents over the past five years are shown in Table one. In general, the material traces the transition of the mobile telephone culture. In the mid-90's it was more the exception than the rule that one owned a mobile telephone. By 2001, the situation was quite different as saturation is almost complete among some age groups. In this section, I will examine three time periods, 1997, 1999 and 2001.

1997: One can see in Table[9] one that at the beginning of the period only a small portion of adolescents owned a mobile telephone. The mobile telephone was, by no means unknown in Norway. Indeed there were slightly more that 1.67 million mobile subscriptions for a total population of about 4.4 million. Ownership at this time was focused on business use[10].
When looking at ownership among the adolescents in 1997, one finds that was largely centered among the older adolescents, i.e. those who were finished with their obligatory schooling and were able to have a job. The other striking feature is that boys have a much higher interest in the mobile telephone than girls[11]. Particularly among the oldest adolescents, one can see that a relatively high percentage of males have a mobile telephone and a relatively small number of girls own one. The reader must remember that this was at the beginning of the wide spread development of subsidized handsets. In addition, it was before the commercialization of pre-paid subscriptions, two developments that were central to the widespread adoption of the device.
1999. In the next time period, 1999, one sees quite a different picture. Indeed, the very curve of the lines is different from those of the previous period. Instead of a concave profile as in 1997, one sees a convex profile. By 1999 it was no longer unusual to see a teen with a mobile telephone. In some senses, the revolution was over by 1999. The fact that such large numbers of adolescents had a mobile telephone indicates that there had been a sea change concerning the device. It was, by this time, a normal part of an adolescents' gear.
The data for 1999 was gathered almost two years after the commercialization of the pre-paid cards. One can see that those in their mid-teens have largely adopted the mobile telephone. It was during this period that the mobile telephone was a

[9] This data comes from a series of survey among a representative sample of adolescents in Norway carried out by Telenor between 1997 and 2001. In each survey a random sample of approximately 1000 persons was interviewed.
[10] This in itself was a dramatic increase from the ca. 364 000 mobile phones found in Norway in 1993, the year that GSM service was introduced.

Table 1

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

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

popular confirmation gift[12]. By the time one left middle school - at about age 15 or 16 - the large majority of adolescents owned a mobile telephone. There are a couple of issues here. The first point is that there is no statistical difference between the adoption patterns of the males and the females. Where the males had been predominant at the beginning of the adoption cycle, females had not caught up. To set this into a broader context, by 1999 when this data was collected, inexpensive subsidized handsets had been available for more than two years. In addition, pre-paid subscriptions were also more than two years old. These two factors, and particularly the latter meant that there were fewer economically based concerns associated with the ownership of the mobile. Parents' argument that the irresponsibility of their children could lead to economic ruin had fallen since, in the worst case, the adolescent could only empty their pre-paid subscription for a few hundred kroner. In addition, the argument that one could loose an expensive handset had lost much of its validity since handsets were readily available and relatively inexpensive.

Finally, another motivating factor here was the discovery of SMS by the adolescents. In the summer of 1997, they found that they could send messages to each other free of cost via text messaging. This function, originally seen as a medium for staid functions such as weather forecasts or stock market information, flourished in the fall of that year due to the interest of teens. In 1998, both mobile operators in Norway were forced to replace the free system with a commercial version, partially to avoid the rush on the system and also to generate income. By the time of its commercialization, the adolescents had adopted texting as an integral part of the way they maintained contact.

The second issue is the holdouts. The data shows that there were a significant number who did without a mobile telephone. These adolescents often needed some sort of an ideology to justify their not owning a mobile telephone. Just as some households do not have a TV, these adolescents choose not to have a mobile. This was, however, a conscious choice, not simply a default option. The ideology supporting non-ownership relied on suggestions that the mobile was simply a way to assert status, that it was unneeded or that it was dangerous i.e. when used in traffic or because of electromagnetic radiation.

2001. During the last period shown here, the saturation is actually quite high. In some age groups, there were literally no interviewees without a mobile telephone. Thus, the mobile telephone has become almost completely integrated into adolescent culture.

Another, and indeed quite interesting aspect of the material in 2001 is that girls have taken the lead in terms of mobile adoption. The data shows that there are significantly more girls with a mobile telephone than boys among the adolescent-age users[13]. We saw above that boys were the first to adopt the technology. One can suggest that the boys are more interested in the mobile telephone as object, not as a tool for social network maintenance. By contrast, one can speculate that the girls have a different take on the device. This material suggests that the mobile telephone

[11] $Chi^2_{(1)} = 35{,}8505$, sig. > 0.001.

[12] Confirmation is a common celebration for 13-14 year olds in Norway where membership in the state church is nearly universal. Confirmation is usually marked by a larger celebration within the family wherein the child can expect to receive gifts that are perhaps more substiantial than the standard birhtday offerings.

provides is used in the maintenance of social relationships. Thus, the device becomes not only normalized, but also interwoven into the social fabric. It is not simply a technology, but a tool with which interaction is mediated.
Another issue is the growing personalization of mobile telephones. Beyond the simple ownership of the mobile telephone, the device was becoming increasingly a reflection of one's personality via the use of icons, ringing sounds, covers and other paraphernalia. This issue will be further examined below.

Young adults males

The focus here has been on ownership among adolescents. We now turn our attention to the adoption of mobile telephony among another group, the young adults and in particular the young adult males. While there has been rather extensive analysis of adolescent's mobile telephone ownership and use, the data shows that young adults, and in particular young adult males are perhaps the most intense user group. They have extremely high ownership rates indeed they are equal to those of the adolescents. In addition, as we will see below, they do not simply limit their use to texting and the more economical services. Rather they are intense users of voice telephony.
As of May 2001,significantly more young adult males owned a mobile telephone than did their female counterparts. Approximately 91% of young adult males owned a mobile telephone vs. 79% of women in the same age group[14]. The adoption rate for young adult males is approximately the same as that of the older adolescents. While the current data shows women have their "high water mark" of ownership in the late adolescent years, the current data shows that men in their late 20's are the group of males with the highest levels of ownership. In essence, the two genders exchange positions. Looking at middle aged and elderly adults, men have higher ownership in all of these groups.

[13] $Chi^2_{(3)}$ = 14.5769, sig. = 0.002.

Use of the mobile telephone

Having now focused on groups where there is high ownership, I will now look into both the number of calls reported and the length of use. Both of these indicators will focus our attention on the degree to which young adults are the "big" users of mobile telephones.

Number of calls/text messages

The data presented in the figure 1[15] is the median number of call by age group and gender for SMS and mobile voice telephony[16].
Looking now at the median number of communications sent per day, text messages are the predominant use area for adolescents. There is a gradual transition from texting over to voice telephony as one examines the data for the young adults. The transition is such that voice telephony seems to slowly develop its place in the lives of the adolescents. Around the age of 20 texting is generally replaced with voice telephony.
The data shows that girls and young/middle age women send more text messages than their male counterparts. In addition, the analysis shows that middle-aged women use text more extensively than males of the same age. Women in this group are not nearly as active as the adolescent and early adult women, but they are more active than same aged men. Finally, one can see that those over 40 generally do not use text messages.
Turning now to voice telephony, young adult men (early 20's) and middle-aged men (late 40's/early 50's) are the most active users of mobile voice telephony. Both of these groups make a mean of about two calls per day.
The data, however, indicates that there is a core of extreme users. The period during which one finds the most "extreme users," is the late adolescents and early 20's. Both men and women have extreme users when considering SMS. Indeed during the late adolescents and early twenties[17] women, but more specifically men had a standard deviation that

[14] $Chi^2_{(3)}$ = 11,64, sig. = 0.009.

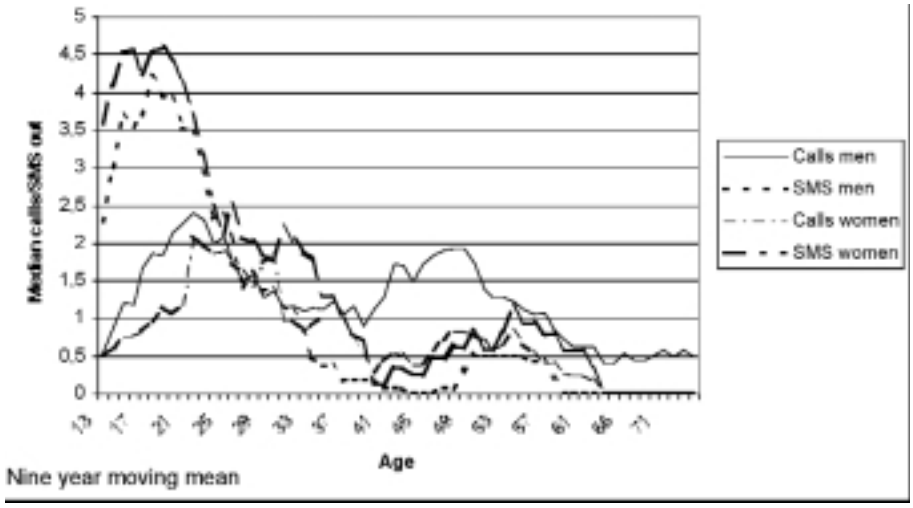
was as much as three time as high the general mean for the group. When looking at voice telephony, the rates are much lower. None-the-less, one finds that among late adolescent and young adult men there are extreme users.

peak of their male counterparts. After this point, women report a long and relatively stable decline in use.

The data also reveals that there are extreme users when considering the length of use. As with the material reported above, these extreme users are generally in their mid 20's.

Figure 1

Median number of outgoing calls/SMS by age and gender, Norway 2001



Time used on the mobile telephone

Looking at the time used for mobile telephone conversations, one sees in figure 2[18] that again it is the young adult males that report the longest use of mobile telephones. The real peak in use starts among those in their late adolescents and peaks in the mid 20's[19]. The reported high levels of use extends into those in the early 30's when the statistics for the length of use drop. For women there is a quite different pattern. The point of longest use comes at the very end of the adolescent years and is considerably below the

Reason for calling

Beyond ownership and the use of the mobile telephone, one can look into why people call. Qualitative analysis indicates that there are countless reasons for imitating a call. For the purposes of the analysis, here we limited this to three general categories. These included 1) to inform or to gather information, i.e. regarding meetings, coordination etc. 2) to engage in social interaction and 3) to send or receive gag messages, such as humorous text messages. Looking first humorous calls or messages, there were every few persons who reported using voice

[15] This data comes from Telenor's May 2001 analysis of mobile telephony..

[16] The median, not the mode, is used in this analysis. Median eliminates the effect of the small number of extreme users and thus these numbers may appear somewhat low at first glance.

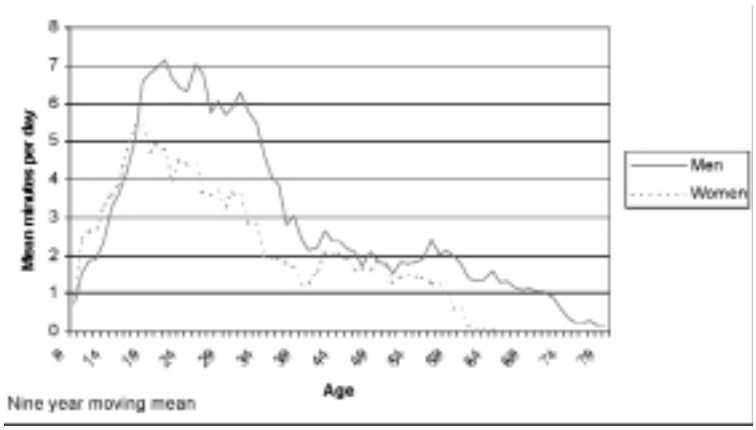
[17] Age groups wherein there are extreme users are defined as those age groups wherein the standard deviation that was more than 50% above the total standard deviation for the group.

telephony for gag calls. This follows from a long tradition of seeing such calls as inappropriate and even dangerous. By contrast, many respondents reported sending amusing SMS messages and icons. This was most common among the teen boys. Indeed there is a small industry of SMS text libraries that sell such icons.

Some people reported using the mobile telephone for calls that were mainly social. This was particularly common among the middle aged and older respondents. However, there is very large portion of texting is seen as being social. Indeed, the largest portion of text messages reported by late adolescents and early adults were seen as being a type of social interaction. If one looks into the gender of the respondents, one finds, not surprisingly, that women report this type of interaction more often than their male counterparts. Finally looking at communications for exchanging information, the data shows that young adults use text in this capacity – particularly young adult males. Among the middle aged and elderly users, this is the primary use of the mobile telephone. This latter finding is not too surprising as the original gloss of the device was an instrument with which one could exchange instrumental information.

Figure 2

Mean minutes per day used for mobile voice telephony by age and gender, Norway 2001



LANGUAJE OF THE WRITTEN MESSAGES

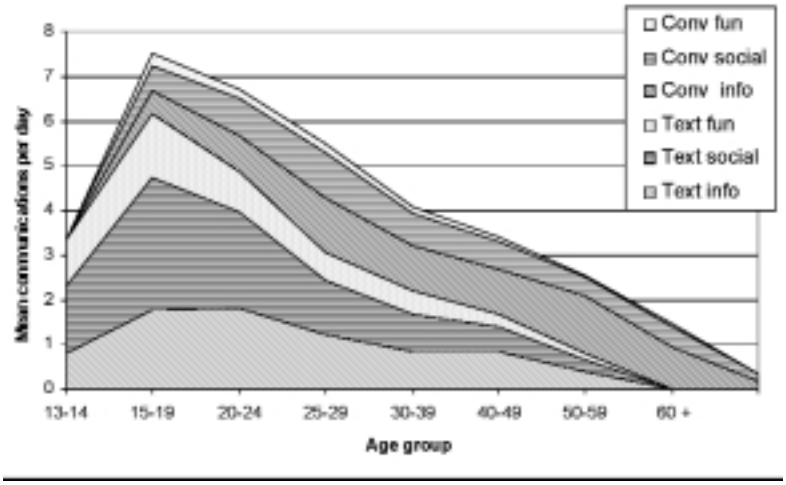
As in the rest of the countries, written messagerie is creating a new and special language set up, so Norway is no exception on this. Here are some examples of a few abbreviations used among the many used, both in English and in Norwegian language.

There is a page with such abbreviations[20], precisely created by Telenor, to incentive the use of such written language. One can see the influence of English. Nonetheless, many codes are strictly Norwegian .

[18] Data for this analysis comes from the 2000 Statistics Norway media use survey.
[19] Data also shows that more than 55% of all their calls made by persons in this age group are mobile.

Figure 3

Number of outgoing calls/text messages by the major reason for the call by age, Norway 2001



SUMMARY: TWO CULTURES OF THE MOBILE TELEPHONE

Three man results arise from the material here. The first is the mobile telephone culture among the adolescents, second is the gendering of the device by adolescents and the third is the oft-overlooked culture of telephony among the young adult males. Looking first at the use of the mobile telephone among the adolescents, the material here points to four characteristics of this group. These are 1) high levels of ownership, 2) gendering, 3) personalization and 4) texting. Beyond all of this, however, one can perhaps say that it is here that the device has become an icon for adolescents. It is among the adolescents that the device – or rather certain versions of the device such as the Nokia 3310 – has its cultural center point. There is active use of texting, downloading of icons and ringing sounds and there is the personalization of the terminals. All of this is done more intensely among Norwegian adolescents than among other groups.

One of the surprising things is how quickly this has come. In 1997, the mobile telephone was seen by adolescents as a somewhat morally questionable development (Ling 2001). Within very few years, this estimation had changed (Ling and Yttri forthcoming). Now the device helps to define adolescents vis-à-vis older generations. At a practical level, it solves several problems associated with coordination and in some respects security.

The culture is characterized by intense use of the mobile telephone, both in its physical decoration and staging and via the use of text messages in order to maintain their social network (Ling and Yttri forthcoming). The device is used to

Código	Local meaning	English meaning
	Taken directly from english	
CUL8R	See you later	
GR8	Great	
U	You	
	Adapted to norwegian language	
7K	Sjuk	Sick
D	Det	The
R	Er	Is
DRQLT	Det er kult	It's great
GID	Glad I deg	I love you
Ñ	Nja	Perhaps yes, perhaps no
OXO	Også	Also

synchronize everyday life, it is displayed as an artifact, it helps one maintain a social interaction and it also ties the group together via various interactions, and humorous patter etc.
However, to simply focus on the functional aspects of the device is to generally miss the point. Its real impact is in terms of its ability to define adolescents' identity. At a broader level, adolescents need for the establishment of identity that is separate from that of their parents. Indeed this is, as we have seen one of the major functions of adolescence in contemporary society.
Beyond the "mobilization" of adolescents, the data shows that the mobile telephone has changed from being a gadget for the guys into being more of a social networking tool for girls. In the background analysis, we were able to examine women's role in social networking. The analysis pointed out that women often have a central position in this activity. In addition, it was suggested that women's verbal and linguistic competence, whatever the background for this may be, meant that they were disproportionally qualified for this.
This more general social context helps to explain adolescent girls' adoption of mobile telephone. The adoption and use of the device, particularly for social communication can be seen as a type of pre-socialization of adolescent girls and their role as keepers of the social network. While during the recent past much of this activity is often carried out via the fixed telephone, the newer technology has opened a new possibility here.
Thus, in addition to the fact that the mobile telephone is a practical device for coordinating everyday activities, and in addition to the role of the mobile telephone in the emancipation of adolescents from their (hopelessly old fashion) parents and in addition to the fact that it has become a type of adolescent icon with all the accompanying personalization of devices, adolescent girls' dramatic adoption of the device can be seen an element in their pre-socialization as mature women. This is a paradigm shift in the cultural understanding of the mobile telephone. Once we have established this one can ask the next question. Namely, will today's adolescent girls become tomorrow's super users? The answer seems to be both yes and no. Yes since they carry with them insight into the effective use of the mobile telephone, both for voice telephony and SMS. Indeed their mothers are already adopting the use of SMS. On the negative side, it is middle-aged men, not women who most often have subsidized mobile telephones from their jobs. To the degree that a lack of economic support hinders mobile telephone use, this will obstruct use of the mobile telephone by this group.
Now looking into the use of the mobile telephone by the young adult males, one finds a slightly different gloss. To quickly review the material, they have high ownership rates, and extremely high use of voice telephony. There is less personalization and less use of texting among this group.
Looking at their life phase for a moment, the period between the end of obligatory schooling and the establishment of a "routine" family and work life is perhaps more nomadic periods. The flexibility provided by the mobile telephone fits well into this social context.
Looking slightly further, within this café society, one finds a set of super users, i.e. those who report making many calls. Their use is generally far over the median use of others in their age group, and more generally far over that of the population as a whole. Again, there is likely a type of presocialization at work here. These individuals aspire to leadership positions in dynamic companies. Thus, the image of rushing between flights while gathering information and giving orders to underlings seems, perhaps, quite near. Again, the mobile telephone fits into this self-image, albeit in a slightly different guise. The point here is not to mark the boundary between one and one's parents, as it is with the adolescents. Rather, it is to mark one's association, and perhaps one's aspiration. Thus, the more extravagant plumage of the adolescent mobile is replace with a staid

[20] *http://telenormobil.no/oyo/comunícate/sms_ordliste.jsp*

image. In addition, the asynchronous aspect of texting is replaced with the immediacy of voice telephony.

Thus, we have seen that there are various possibilities for the mobile telephone to support, and perhaps even encourage the development of various sub-cultures. The two most obvious from the data are those of the adolescents, and more specifically adolescent girls, and that of the young adult males. As the mobile telephone spreads into other sectors of society one can expect each group to do its own take on the device and to appropriate, or perhaps reject it, it in a way that makes sense within that context.

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SMS USE BY YOUNG PEOPLE IN THE NETHERLANDS

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This article shows the way that Dutch teenagers use their mobile phone and especially how the use of the SMS has become a substantial communication pattern among them. As an explicative sociological theory it is said that the youth culture in The Netherlands is both being influenced and influencing the use of the mobile phone and of the SMS

Key words: Mobile phone, GSM, SMS, text messagerie, information and communication technologies (ICT), information society, youth, socialization, communication, primary group.

Introduction

Mobile phones were first marketed in the Netherlands in 1989 [I&I, 1996]. The mobile phone was very expensive at that time and could only be afforded by a very few. The GSM was introduced onto the Dutch market in 1994, aimed at middle aged mobile working people, and received scant attention. In 1996, 5% of the Dutch population owned a mobile phone [Nederlands Dagblad, 1996]. Today we can state that the whole population is widely covered. An explosion in the number of users occurred in the second half of this decade. At the end of 2001, approximately 70% of Dutch people possessed a mobile telephone [Eurescom 2001].

Initially being aimed at adults, it is a striking fact that nowadays the percentage of young people owning a mobile phone exceeds the average. Two years ago, it was quite rare for a young person to own a mobile. Most recently, however, young people have substantially contributed to the rapid increase in mobile phones on our streets.

When analysing how these young people make use of their mobile phones, a striking difference arises when compared with how the adult part of Dutch society uses theirs: a significantly higher percentage of young people make use of the mode involving text messages sent using the Short Message Service (SMS) for a fixed amount of money (€ 0.23). The use of SMS has become an integral part of the youth culture that instigated it, and is influencing this culture in a unique way.

The purpose of this article is to provide an insight into the way young people in the Netherlands are using their mobile phones and, especially, how the use of SMS now forms a substantial part of the way in which young people communicate. As an explanation, we focus on youth culture in the Netherlands which is both influenced by and influencing the use of mobile phones and SMS.

Data sources

We made use of the following data sources:

1. General statistics provided by statistical offices in the Netherlands
2. Information on Internet on mobile phone and SMS use by young people in the Netherlands
3. Dutch data from EURESCOM P903. This international comparative research was conducted between 2000 and 2001 and consisted in both a qualitative and a quantitative part. In the qualitative part, focus groups were conducted in 6 European countries on aspects of day-to-day living influencing the use of Internet and Mobile

phones. In the quantitative part, verbal interviews were held in nine countries among a representative sample of 1000 respondents each, both users and non-users of Internet and mobile phones between 16 – 80+ years of age.

4. A limited qualitative study by Eva Hammann, amongst twenty young people between 12 and 16 years of age, on the use of mobile phones and SMS.
5. Literature about young people's lifestyles and development.

Evolution of mobile telephone use

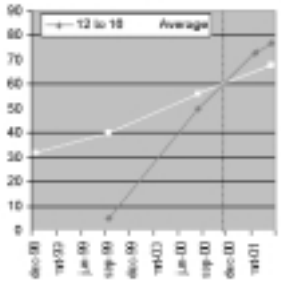
The mobile phone market in the Netherlands has undergone massive growth in a very short time scale. Seventy percent (70%) of the population acquired a mobile phone in three years, whether on a pre- or post-paid basis[1]. Present day young people are thus the first generation growing up with mobile phones. Since the end of the year 2000, the percentage of young people possessing a mobile in the Netherlands has surpassed the average. By spring 2001, about 77% of 12 -15 year olds possessed a mobile. Research carried out by the Eurescom group P903 at the end of 2000 shows that more than 80% of young people between 15 and 22 years of age own a mobile phone which they use for private purposes.
The popularity of the mobile telephone grew tremendously with the introduction of pre-paid telephones. The availability and, especially, the affordability of the mobile phone increased with pre-payment whilst also bringing this new technology within the reach of financially weaker groups: the great majority of Dutch mobile phone owners have a pre-paid subscription. As the financial situation of young people is generally less buoyant than adults', it is therefore not surprising that among young people, the percentage of pre-paid cards is much higher than among the adult part of the Dutch population. This percentage is 90% among teenagers (12 -16).

1. Elsevier, Bellen: einde subsidie, 14-04-2001, www.else4.nl

Mobile phone use among young people

Being the first generation to grow up with the mobile phone, the difference between young people and the rest of society is not just visible in the wide-spread nature of this device among the groups but also in the way these young people are using the mobile phone to communicate with each other.

Figure 1
Percentage Ownership of mobile phones
in the Netherlands over the last two years.



As Ling and Rautiainen's studies show for Norway, teenage phone behaviour also differs from adult behaviour in the Netherlands. Major differences appear when comparing teenagers with the rest of the population [E. Hammann, June 2001].
1) A high percentage own mobile phones and a higher percentage have pre-paid subscriptions: As mentioned above, young people tend to possess a mobile phone more often and when they have one, it is mostly the pre-paid type.
2) Heavy use of SMS: Another striking difference is that young people are the major users of SMS. SMS is a popular way of communicating with each other nowadays.
3) Heavy use of games: One of the popular uses among young people is playing games. This is particularly true of boys. Nearly all young people use this function, some only occasionally, others whenever they have a minute to spare. When the terminal does not provide enjoyable games or does not have any games at all, it is common to borrow phones from friends to play a game.

Research shows how playing games is important among this group [E. Hammann, June 2001]: "Renee (12): "I really like playing games on a mobile phone. I use my brother's as I don't have games on my own phone."

4) A high percentage of conversation with friends: Another difference between young people and adult users is the kind of people they communicate with. Among the young, most conversations are with friends (75%). Grown-ups have less conversation with friends. Most conversations are with family members (28%), partners (25%) and job related (22%) (EURESCOM 2001). This again illustrates the enormous function the mobile phone has in peer group society. In general, when people become older and have their own families, the family network becomes increasingly more important. Research also shows that young people see the mobile phone as a way of maintaining social contacts more than older people do (50+) .

5) A strong need for personalisation: Having a mobile phone is not enough, it has to be personalised. Accessories for mobile phones such as colour fronts, nice music tones and images also have an important meaning in the youth mobile culture. In the market for mobile phones and other digital devices, the sale of accessories is as important as the sale of phones themselves. These accessories are therefore carefully positioned within this target group, in which the industry generates a great part of its revenue.

6) Another aspect of the mobile phone is the predominant use made for short distance contacts. When the network is located further away, fixed phone and letters or e-mails are used to get or stay in touch. A typical feature of young people is that networks are very close-by: in the same neighbourhood, at the same school, clubs etc. The mobile phone is then a very handy means for keeping in touch when face-to-face conversation is not possible.

There is a clear gender difference in the use of the mobile phone: Boys are more interested in the technical functions of the device. They use it mainly for recreational and non-communicational purposes. Conversations are shorter and more directed to co-ordination and organisation. On the other hand, girls use the mobile phone as part of their conversation culture. They emphasise actual communication itself and are large-scale users of SMS and accessories. (Hamann 2001)

As mentioned earlier, mobile phone use has undergone a very rapid growth over the last few years. Two factors contributed to accelerating mobile telephone use: One was the introduction of a cheap mobile telephone with a campaign directed especially to young people (hi) in 1997, and the introduction of the pre-paid card some years later making it possible to keep mobile telephoning costs under control. It is not surprising that the first to benefit from this possibility were once again young people who are known to be large consumers of telephone ticks. Young people were thus able to acquire this highly desirable new technology. The pre-paid subscription is consequently far more popular among younger people than adults: 90% of the former have pre-paid subscriptions, which is significantly higher than the average of 65% [Multiscope, 2001; Algemeen Dagblad, 2001].

The prepaid card's success among youngsters is due to two reasons:

Firstly, it enabled them to keep telephoning costs under control. It is clear that costs play an important role in the decision to buy a mobile phone, to take out a subscription or to use a pre-paid card. In general, it may be said that people in lower income brackets are more likely to be interested in monitoring the telephone budget. Hence they are less likely to buy a mobile phone and/or care for the budget by using prepaid cards. This is illustrated by the following figures: (Interview/NSS 2001)

Table 1

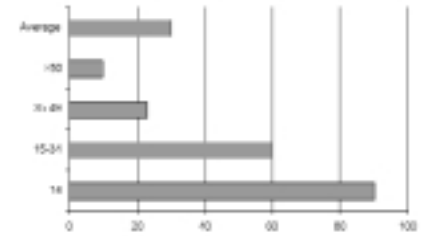
	Pre-paid	Post-paid	Total
Mobile telephone users	65		
Women	75		
People with higher education		52	
Working people	40		81
Non-working people		30	59
12-17 years old	90		73

How much money are youngsters able to spend on mobile communication in the Netherlands? On average, they have about € 160 to spend overall every month [Interview NSS, 1999]. The major part is a combination of pocket money, clothes money and additional-job money. For younger teenagers, this will be clearly less, since they are not legally allowed to have additional-jobs. How much they wish to spend on a terminal varies per person. However, from interviews and surveys, we can deduce that the average teenager spends about €10 to €25 each month on his/her mobile phone subscription. This corresponds to the conclusion of Ling [Ling, 1998] on Norwegian youngsters in 1998, who spent about 6% of their total budget on mobile telephony.

SMS USE AMONG YOUNG PEOPLE

The introduction of SMS for pre-paid subscribers in the autumn of 1999 led to a substantial increase in SMS use. An increase of 400% was seen amongst young people in one year.

Figure 2
SMS users per age, year 1999 (%)



Source. Algemeen Dagblad, 2001

Compared to adults, a significantly higher percentage of young people make use of the possibility of sending text messages using the Short Message Service (SMS) for a fixed amount of money (€0.23) via the mobile phone. Today, about 83% of teenagers make use of SMS compared to a 30% average. About 18% of Dutch youth even use their mobile phone only for sending text messages. Moreover, girls send SMS messages more often than boys [Emerce, 2000; Algemeen Dagblad, 2001]. (Around 90% of the fourteen year olds in possession of a mobile phone send an SMS message once in a while, while 60% of the 15-34 years old do so as against 25% and less then 10% of the 35-49 and 50+ age brackets respectively).

Teenagers rarely send only one SMS message. It practically always ends up starting a SMS conversation. The average teenager sends three and receives three messages every day. This amount of text messaging combined with the difficult manner of 'typing' resulted in the creation of a specific language with codes and abbreviations that is not comprehensible to an outsider. For example 'Gr8 2 CU' means 'Great to see you' . Besides sending and receiving SMS messages via the mobile phone, teenagers use the Internet to send free text-messages to their friends' mobiles. Receiving free information via SMS, such as sports results and information on music, is also highly popular.

Heavy use of SMS

The fact that SMS is very popular among teenagers means that it definitely fulfils very specific communication needs among this group. Some intrinsic features of this way of communication apparently offer relative advantages to young people.

What advantages does SMS offer?

Research on Dutch teenagers (Hammann 2001) shows that they consider that SMS provides several advantages. The first is speed. They are skillful in sending messages with the user interface. Thus they point out that it is much faster to send a SMS than to make an often long, sometimes awkward, phone call.

The second reason involves money. As already mentioned, the absolute costs of a SMS message are lower than those of a phone call; one SMS-message is always the same price: € 0.23 while costs of a phone call can vary between € 0.11 per minute during off-peak hours and € 0.40 per

minute during peak-hours with a pre-paid subscription. In addition, they feel they are more in control of such costs.
The third reason mentioned is convenience. Text messages can be sent and received silently, which is more discrete and avoids long, unwanted and rambling conversations.
Finally, SMS is less direct. Compared to a face to face conversation, a phone call has the advantage of not having eye-to-eye contact which simplifies some conversations. With SMS, this effect is even greater, since there is more time to think what the message should be and the recipient cannot draw conclusions from the tone of your voice or other physical indicators. This is why SMS is very popular amongst young people for making dates.
The fact is that SMS messages in the Netherlands have become a primarily young people's phenomenon. An important question to be asked is why this new form of communication became so successful among this specific group. In other words, what is the explanation behind these figures?
The reasons behind the popularity of mobile phones and especially of SMS are that this new technology fits perfectly into the young person's time of life and situation in it. The next paragraph will use theories on young people's time in life and general communication patterns to explain how SMS fits into such time.

YOUTH CULTURE AND SMS COMMUNICATION

The phenomenon we see in the Netherlands does not stand alone. We see the same, for example, in the Nordic countries: Finland, Sweden, Norway and Denmark. But Belgium, the UK and Germany also show high SMS use especially by the young. In Germany, however, SMS is also relatively popular among the older generation (EURESCOM 2001).
Silverstone and Haddon (1992) have developed a theory on the adoption and domestication of ICTs in everyday life, that explains how, after a while, new technology finds its way into the general habits of day-to-day life. After the initial take-up, people learn the different possibilities for use and adapt the technology to their specific needs and behavioural patterns. Hence widely different uses and meanings can be ascribed to the same technology.
The fact that young people all over Europe seem to show the same patterns of SMS use must be explained by the comparable situations young people experience in Europe which rule out cultural differences.
What is the everyday life situation of young people between 12 and 18 years of age?
Hendry cs (1993) in their study of adolescence and adolescent life styles in the latter part of the 20th century paint a picture of individuals caught in a prolonged transition from childhood towards adulthood. During this transition period, they have to learn a number of skills to prepare them for the adult tasks to come. Havighurst (1972) mentions:

1. Achieving new and more mature relations with age peers of both sexes
2. Achieving a masculine or feminine social role
3. Accepting one's physique and using the body effectively
4. Achieving emotional independence from their parents
5. Preparing for marriage and family life
6. Preparing for a financial career.
7. Acquiring a set of values and an ethical system as a guide to behaviour
8. Desiring and achieving socially responsible behaviour

The predominant situation of the adolescent in modern western society is the extended school period. They are financially dependent on their parents during this time. They still live in the parental home, with the obligation to obey rules as set them by their parents. School provides tasks and obligations but does not give much room for experimenting with individual freedom. Lewin (1970) argues that, in passing through childhood into adulthood, adolescents are in a marginal position

and enter a 'cognitively unstructured' region. In this period of life they have to develop a satisfactory self-concept in a period characterised by much uncertainty and change. The adolescent must learn to function outside the family sphere in which his parents are the strongest reference points. He/she also learns that the parent is not the all-knowing, completely trustworthy person he/she thought when he/she was a young child. Hence, with the onset of adolescence, his/her peers become his/her prime reference points. People of the same age are considered to be the understanding, accepting and supportive persons on whom to lean. Peers play an important role in school and leisure time.
Communication with peers is an important factor in his/her daily life. Hence communication devices that allow for contact with peers without parents or teachers interfering are very appropriate in this stage of life and explains the popularity of the mobile phone and SMS messaging.
However, communication behaviour and communication content may differ from group to group.
Coleman (1979) proposes that at different ages particular types of relationship patterns come into focus. Young people deal with the tasks they have to face by solving one issue at a time. According to Coleman, concern about gender roles and relationships with the opposite sex come to a peak at the age of 13. Concerns of acceptance and rejection from peers are highly important around 15 years of age, issues with respect to gaining independence from parents climb steadily to peak around 16 and then begin to tail off. These different patterns also mean different communication behaviour, a different use of communication devices and a different meaning given to the communication device in day-to-day living.

A Finnish study of mobile phone use as made by children illustrates these focal patterns by age group (2001 Pirjo Rautiainen). She shows that the meaning and use of the mobile phone changes with age. The pre-occupation with SMS messaging is especially high in the early teens. After 16, the adolescent shows a more 'grown-up' pattern of mobile phone use, in which SMS becomes less and face-to-face more important.

Youth culture in Dutch society

The general features as described above also hold for the Dutch adolescent. Being very child centred, Dutch society has undergone an enormous change in positioning the child as from the end of the sixties up till the present time. Before the sixties, children were seen only as part of the family. Ideologically, the family, as the warm nest, should be giving the growing child everything it needed. Cosiness was an important feature: parents and children sitting together in the living room, playing games and listening to the radio. Of course there was something of a youth culture, but it was seen as something trivial and not to be given too much attention. Children were supposed to behave themselves, heed their elders, live a responsible life. (Kleijer and Tillekens 1998, Sjoerd de Jong 1997)
This all changed after the second half of the fifties. Rock, Flower Power, punk, house became more and more the focal points of young people's leisure time and lifestyle. Their activities and fields of interest were no longer embedded in the sphere of the parental home. Dutch society gradually changed into a consumer society in which hedonism was an important element. The large baby-boom generation set the stage for freedom, helped by the second wave of emancipation in which the freedom of women and the right to lead their own lives were preached. A whole generation grew up with the anti-authoritarian values of parents who had fought for their freedom and taught their children that life was initially freedom to experiment with everything life has to offer (de Vreede 1995).

The media discovered youth culture and since then youth culture and the dangers of youth culture have become a fact of everyday life. Dutch media are very much concerned about Dutch youth and ask the question of whether we are not too

condescending to our youngsters. The Dutch government has declared youth policy as a top priority. Nevertheless, research shows that youngsters still have the same standards and values as their parents and both parents and children are satisfied with education. What has changed is the environment of education: the neighbourhood and school have become more personalised (De Winter 2000). Apart from parents, there is less participation of other grown ups in young people's lives. Hence it is likely that the peer group has become even more important to Dutch youth than it was in the past.
Moreover, the life of adolescents in the Netherlands has become even more structured than in the fifties. Despite much re-organisation of the learning programme, schools that still demand a major part of the day and the week are still largely institutions in which pupils are supposed to follow (often boring) classical lessons, during which secret communication with peers going unnoticed by teachers is very welcome. There are many obligations after school is out: homework, sport, music, activities in clubs and with friends, going out, a part time job to earn money required for leisure time activities, all call for co-ordination and the use of ICT for communication and the co-ordination of tasks has become increasingly important. Research shows that Dutch young people are the heaviest users of e-mail and Internet within the European Union. They are also sports club members more often than their peers in other countries.
Like their parents, Dutch young people live a very hectic life, in a trend of individualism and the need to be self-sufficient (de Winter 2000), in which co-ordination is an important element. Mobile phone and SMS come in very handy, both for communication with peers at times when an open conversation is not possible, and for co-ordinating after-school activities.

Dutch young people's adoption and use of the mobile telephone.

The scope of this paper does not allow us to make a comparison between Dutch youth and young people in other countries. We will therefore limit ourselves to some illustrations of the ways mobile phone and SMS uses fit into the day-to-day life of Dutch young people, as relating to the afore-described features of Dutch youth culture and, particularly, making use of Eva Hamann's study (2001).
The main aspects of this culture are:

- Maintaining your status with and place in your own gender group
- Establishing and demonstrating your own identity
- Showing independence from your parents and teachers

Status and being a part of your own gender group

Young people are well-known for being heavy telephone users. The use of mobile phones amongst young people fits into their general use of the phone as a communication tool. Before the mobile phone existed, numerous complaints from parents about the continuous occupation of the fixed telephone, especially by their daughters, and about the high bills resulting were a phenomenon known worldwide. In the USA, a second telephone line was often installed in the household to enable the young to have unhindered telephone access without being a nuisance to parents [Mante 2000, Katz, Batt 1999]. In the Netherlands, however, fixed phone fees were not as cheap as in the USA, hence the availability of pre-paid mobile phones met the need for telephone communication with peers outside parental control.
Although the fixed phone is cheaper and therefore still more widely used than the mobile phone, the latter offers young people more privacy and control in their communication. Research shows that young people in general spend twice the monthly budget they assign to the mobile phone on the fixed phone. Moreover, young people between 15 and 21 years of age spend a far greater amount of money on fixed phoning than other age groups. As those young people still live mostly in their parents' home, costs are not important to them.

Hence the fixed phone is the instrument to use for lengthy chats with friends and others.
As we saw earlier, 90% of young people between 12-22 years of age possess a mobile phone. By spring 2001, about 77% of the 12 -15 year old age bracket owned a mobile.
The first phone is often a cheap, basic model or a second-hand one[2]. Because this first model does not meet the young person's full requirements, it is often typically replaced by a far more sophisticated one within six to twelve months, often paid in full or in part by the young person him/herself [Turner, 1999].
Joyce (12): "At the moment I have my brother's old mobile, a big ugly thing from Libertel. I will shortly be buying a new one, probably a Nokia"
(Hammann 2001)
Qualitative interviews among Dutch young people [Eva Hammann 2001] show that the mobile phone is for them not only a means of communication but also an important accessory in their daily struggle to create their own identity and in being accepted by a group. The following comments illustrate how important owning a mobile phone is in the eyes of youth culture:
Leander (13): " Only ugly, old-fashioned kids don't own a mobile phone"
Eline (14): Nearly everyone at school has a mobile phone, only a few kids don't, but they don't fit in."
Having no mobile phone means one is an outsider, a horrid idea for most young people. However, it may be that for young teenagers, possession as such is the main concern, but fairly soon the appearance of the phone to the eyes of their peers becomes even more important.
Leander (13): "I have a Nokia 3210, because it is a good looking phone that works well".
Evelie n (12): " At the moment, I have a big mobile phone of my mother's. I want to buy a new one, but my parents want me to sell this one first. The problem is that nobody wants to buy it".

2. Eva Hammann, New mobile services for 12 – 15 year olds, June 2001, Leidschendam.

Acquiring and demonstrating your own identity

Being a teenager means living in a period of uncertainty and growth, where great importance is given to the group they want to belong to and to their peers. In the process of identifying or belonging to a specific group, they also have to have the right "look" to fit in. Identifying and belonging is also a question of demonstrating this to the outside world. Communication with peers is very important and frequent. Young people are in a process of struggling to find their identity and to emancipate from parental authority. This emancipation also takes place in financial terms. In this period, they obtain their own budget from their parents and start working in minor jobs outside school hours. This low budget allows them to finance some activities and fund important items such as clothing, games, going out, etc.
Yoline (16): "I want a small phone, with a lot of functions and a nice design. It's cool to have."
The mobile phone not only gives the young person the possibility to identify him or herself as part of the group. It is also important for demonstrating their own identity:
Joyce: " I want a Nokia, because I can then change the front once in a while".
According to Oksman and Rautiainen, the relationship with the mobile phone changes with the age of the young user. We already saw that during their development into adulthood, teenagers go through different stages in which they define their relationships with their peers and the family. It is highly likely that the use of the mobile phone mirrors this development.
This research clearly shows that between the age of 10 and 15 particularly, the mobile phone increasingly works more as a means to express the individual's own personality. After that, it is more functionally integrated into the adolescent's day-to-day life.
Showing independence from parents and elders

The fact that pre-paid subscriptions and SMS are very popular among young people can be explained by one feature of adolescence: the need

Table 2

Relationship with the mobile phone according to age group in the year 2000 among

Finnish children and adolescents

Age	Small child (under 7 yrs)	Child (7-10 yrs)	Pre-teen (10-12 yrs)	Teenager (13-15 yrs)	Pre-adult (16-18 yrs)
Relationship with the mobile phone	*Relationship is often either indifferent (imaginative) or personifying (animistic) *The device may be interesting but important toys are more significant. *Games as the most interesting feature.	*Attitudes begin to differentiate. The relationship is usually quite pragmatic. *The mobile phone is seen as a game station.	*The "mobile fever" age: the mobile becomes an important appliance, the significance of toys has diminished, and the importance of hobbies and friends increases.	*Attitudes to mobile phones differentiated: practical and instrumental for some and expressive and affective for others. *Personalising and making the device more aesthetic.	*Relationships where the practical and the instrumental side are highlighted become more common *Off-line use decreases.

to emancipate from parents. Independence means being free from parental control and, consequently, also being financially independent for the important things in life.

Fixed telephone use is one of the things parents are able to control, especially in the Dutch situation where children do not have their own lines. Parents have to pay the telephone bills and will try to influence their children's telephone behaviour.

Mobile telephoning is possible outside parental control. When the young person has a monthly subscription, he/she can use the phone as much as they like. However, one result is that they may be unpleasantly surprised when receiving a bill several times higher than they can afford. The problem has to be solved by asking parents for help, which is contradictory to the need for becoming an independent human being. If the young person pays the phone bill in advance through a pre-paid subscription, he/she ensures that no more money than that affordable will be spent and, therefore, no justification has to be provided to parents. Another benefit of pre-paid subscriptions is the lack of fixed monthly costs. Making use of cheap ways to communicate is another way of controlling a communication budget. The specific young person's needs contributing to the popularity of SMS are largely due to a need to provide a budget. SMS involves a relatively cheaper way of communicating. As young people do not have large budgets available, they tend to economise. In their daily living situation, they have a lot of costly items on which to spend their money: going out, clothes, (technical) gadgets, clubs, hobbies, etc. SMS comes in very handy for keeping the costs involved in using the mobile phone under control and enabling money to be spent elsewhere.

Yoline (16): "When I bought my mobile phone, I didn't select the network. I simply chose the terminal I wanted, and bought it from the provider making the cheapest offer".

Providing for a budget, however, is not the only reason SMS is popular. It is also functional as regards the need to be independent from the world of parents, teachers and other outsiders. SMS is a perfect means in a culture that encourages the use of cryptic messages to peers. Thus its functions fit into the activities of everyday life. SMS means cheap, quick, impersonal, discrete and cryptic communication and that is more than any other means of communication can offer nowadays. To avoid unnecessary conversations with parents, young people prefer a text message to inform about what they are doing and the time they will be home. This message can be sent without their peers noticing, and, at the same time, avoids embarrassing calls from worried parents. Text messages are also used to organise co-ordination within their own peer group.

This need for keeping text messages short, combined with the need to identify with peers and emancipate from parents has to be seen as backgound for the development of a special SMS language, known only to the peers with whom they communicate. It is a kind of 'shorthand' with symbols and signs that only have a meaning in the specific youth scenario. As communication requires symbols to be understood, a kind of dictionary is developed to enable the young to make use of the same symbols with which to communicate. This is the reason why a whole SMS 'secret language' has developed. It is also a phenomenon that is not exclusive to the Netherlands. The interesting thing is that this language is partly international, partly based on typical national language and partly adapted to the peer group's jargon. Unfortunately, our research does not give particulars on the use of this SMS language. However, we will give a few examples translated into English as an example.

Table 3

Use of SMS language in the Netherlands (http://www.smsnederland.nl/smstaal.htm)

Code	Meaning
1-1	ik wil sex ! I want sex
2m	Tomorrow (Morgen)
2n	Tonight (vanavond)
2d	Today (vandaag)
73's	Groetjes greetings
88's	Kusjes (kisses)
(*_*)	mooi meisje beautiful girl
:-)	ik ben blij I am happy
:-))	ik ben heel erg blij I am very happy
:-):-):-)	ik lach me dood I almost die laughing
:-I	Het doet me niks This means nothing to me
:-(	Ik ben boos I am angry
:-((	Ik ben heel boos I am very angry
:-C	Ik ben teleurgesteld I am disappointed
O:-)	Jij bent een engel ! you are an angel
((H))	Dikke knuffel van mij cuddle/hug
8-)	Ik ben bril dragend I wear glasses
:-#	Ik draag een beugel I wear braces
:'-(	Ik moet huilen I want to cry
:-x	Kusje Kiss
:-i	Ik rook I smoke
(Y)	Ik heb mijn kruis kaalgeschoren I shaved my crotch
(!)	Ik heb een erectie I have an erection
:-9	Ik smacht naar je I crave for you
X-(	Ik ben ziek I am sick
:#)	Ik ben dronken I am drunk
(.)(.)	mooie ronde borsten beautiful round tits
(_OO_)	Bofkont lucky dog (literally 'lucky cunt')
(_13_)	Pechkont unlucky person (literally 'bad luck cunt')
:-(	Boos angry
;-)	Knipoog wink
* * ^ ###	ik mag niks zeggen I am not allowed to say anything
@ @ *	Kusje kiss
@->-->--	speciaal voor jou ! special for you
akg	alles komt goed everything will be alright
beffen	bellen faxen en e-mailen phone, fax and email
biw	ben ik weer here I am again
brb	be right back
bzt	ben zo terug be right back
bs	Bullshit
b-tje	Beetje little bit
cya	zie je later see you later
ff	eventjes / effe / even just a minute
gep	geen enkel probleem no problem
hoest	hoe is 't ermee ? how is it?
ikvjou	Ik houd van je I love you
ikwniet	ik weet niet! I don't know
iig	in ieder geval in any case
ixje	ik zie je I see you
oppt	oppie toppie just perfect
v.l.e.k.jes	veel liefs en kusjes love and kisses
waus	te gek / gaaf too cool

As the above examples show, this SMS language also calls for a substantial amount of inside information on expressions and practices common to young people's specific culture, apart from knowledge of the national language. Hence it is almost impossible for an outsider to use it correctly. Of course this is exactly how it is meant to be.

CONCLUSIONS

The purpose of this article was to give some information on the spread of mobile phone use among young people in the Netherlands, how they use their mobile phones and, particularly, how the use of SMS has become a substantial element of mobile phone communication between the young.

We wished to examine whether this behaviour might be related to a specific youth culture as a consequence of day-to-day life situations in which young people in the Netherlands grow up.
In general, we may draw the following conclusions:

- Dutch youth belongs to the most extensive mobile phone users in Europe. Research shows that Dutch young people are also the biggest users of e-mail and Internet within the European Union, and are making heavy use of SMS[3].
- Dutch youth is also characterised by substantial participation in sports activities and in local social networks, compared to the youth of other countries.
- Their daily life situation is characterised by extended education, a low budget situation and a very busy life, combined with strong educational standards regarding independence and individuality.
- The use of the mobile phone and SMS by the young greatly differs from that of adults, both in frequency and type of use, showing a pattern that is also observed in other European countries.
- There is a gender difference, in the sense that mobile phone use by girls is characterised by communication with their peers, whilst boys use the device more for co-ordination and playing games.
- For younger teenagers, aspects of status among peers play an important role in the type of phone chosen
- Part of the heavy use made of the mobile phone may be explained by the availability of cheap mobile phones and pre-paid cards; the use of SMS is convenient as being low budget and enabling young people to stretch the scope of the pre-paid card.
- Part of the mobile phone and SMS use may be explained in that it fits into the specific life situation of this age group and an already developed youth culture that stresses communication with peers and the development of an own identity.
- Hence SMS use as a new form of mobile communication fits into both the day-to-day living situation and the communication pattern enforced by such situations.
- A special 'language' has been developed for the SMS situation, partly based on international expressions, partly specifically Dutch.

[3] Nederlandse jeugd mailt in EU meest, Volkskrant, 9 nov 2001

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YOUNG PEOPLE AND THE MOBILE TELEPHONE

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This article analyses young people's relations with the mobile telephone not only in order to understand in a structured way how this technology is being used today, but also to better understand the living conditions, attitudes and behaviour of young people and adolescents in the new millennium through its use.
The first point analyses the complex relationship which has developed between access, ownership and use of the mobile telephone both amongst young people and in general. We shall therefore examine how the mobile and its types of use were introduced into this specific age bracket. We shall then go on to analyse, on the one hand, young people's skill and competence in its use. In the next point, we shall examine the methods used for learning how to use the mobile and in the remaining points, we shall analyse the formation of the social integration process which we have called "virtual fraternity" and, in particular, the mobile phone's use balanced between the oral and the written as made by adolescents. Finally, we shall quote some of the SMS related writings.

Key words: Mobile telephone, GSM, SMS, Text messaging, information and communication technologies (ICTs), information society, youth, socialisation, communication, primary group.

Access, ownership and use of the mobile thelephone by adolescents and young people: open problems

We commence by endeavouring to understand the reasons for the introduction of mobile phones and their types amongst adolescents and young people since they describe to us the strategies this age bracket has adopted in relation to this new communication technology and the task they assign to it.

Like any object at all, technologies include their own programme for use inherent to the project itself (Zingale, 1999: 64). However, like other means of communication, the mobile phone is not limited to being introduced into a social context but, at the same time, builds contexts and meanings and, therefore, has cultural effects (Latour, 1992).

However a new technology bears its use and, therefore, those who should use it implicit in itself; this implicitness is never true nor defined in rigid terms (Wyatt, 2000; Ostlund, 2001). It is never true because it still has little capacity of prediction for understanding with certainty whether an innovation will more or less be favoured by the market. And it is never defined because the relation established between a medium and whoever uses it or consumes it is dynamic and flexible inasmuch as technology alters whoever uses it and viceversa (Maldonado, 1998).

In what sense does the user alter technology? The answer to this question is really crucial, inasmuch as altering technologies in the sphere of use in the epistemological, semiotic and sociological debate thereon is frequently mentioned but rarely explicit. Perhaps by analysing the case of

adolescents/young people and the mobile phone, which in this case is emblematic, we shall manage to individualise some interesting aspects of this issue. We would immediately say that young people and adolescents are owed the firm activation of the SMS, which was totally unexpected in telecommunications management. And it is particularly adolescents who are owed the creative, and also unexpected, use of the mobile phone as an instrument for communicating without paying (Oksman & Rautiainen, in the printer's).

In general, possible users form a mental and social picture of the technological medium, recalling curiosities, pieces of information, attitudes, opinions, emotional impact, elements of social prestige, imitation processes, implementation of symbols and meanings, exchanges through conversations, purchase planning, attempts at access and practices for using the technology in question.

They then draw up behaviour strategies, determining their degree of involvement in a certain technology, which is like saying their acceptance. "How many users and who" are the two pieces of data representing the key to reading the dissemination process of a medium and they tell us up to what extent society has allowed such medium to be introduced therein. With respect to the problem of the number of users, it is known that a technology which does not meet a critical mass of dissemination does not manage to be effective on the communication plane and reaching a critical mass and sustained rates of dissemination only happens in the presence of a benevolent attitude from society. With respect to the types of user, their segmentation is an important piece of data which articulates, models, gives form to the initially summary identity of the technology in question directed in one or another direction, as well as its meaning in everyday life. The entry of young people and adolescents into the mobile phone's field of use did not occur in pioneering fashion. In fact, it came onto the scene in an all powerful fashion, not with the first wave of TACS[1] , activated particularly by middle aged men, but fundamentally with the second wave of the GSM. Young people appeared on the scene first, then adolescents and then children. The new generations have therefore contributed not so much towards forming a "critical mass", but to significantly broadening the mobile telephone's dissemination base. However, their entry into the field has subsequently particularised international reading of the mobile, since they have done so as like an instrument of virtual fraternity. The mobile has particularly turned into a very useful instrument for adolescents to autonomously form their intimate circle of friends and of relations with school companions and/or enjoy sport, free time, etc., beyond parental control,
With their way of acting in access, purchase and use, individuals also determine the manner of relationship they seek to maintain with technology. In fact, they decide the trajectory in the sphere of consumption, pushing it in one direction or another, when they decide: whether to acquire it and then, once acquired, to use it; whether to use it without acquiring it; whether not to acquire or use it; whether to acquire more than one technological object. These different types of relationship with the technological object also influence the modalities of use to be made later and the impact which that technology will manage to express on a social level.

The way of acting in acquisition and use is not always consistent. In fact, there is the case of induced use which takes adolescents and young people very closely into consideration. This is the case whereby it is other people and not users who have directly bought the instrument, as we are

[1] TACS is the first generation of mobile telephones in Italy which was developed only in the sphere of the national network. See Glossary. (T's N.).

shown by the survey entitled "ICT Uses in Everyday Life: Checking it out with the people - ICT markets and users in Europe" (Mante-Meijer, E., Haddon, L., Concejero, p.,Klamer, L.,Heres, J., Ling, R., Thomas, F.,Smoreda, Z.,& Vrieling,I., 2001, p.21)[2] carried out by Eurescom at the end of the year 2000 in nine European countries (Great Britain, Norway, Denmark, Holland, France, Spain, Italy, Germany and the Czech Republic). From this same survey, it results that in Italy, the mobile phone is bought in 24.9% of cases by other people. And, in fact, in more than one fifth of cases it is a present made by relations, parents or friends (21.5%), in 1% of cases, it was given at work or was obtained through other people under other circumstances (1.6%).

It is worth stressing that the aforementioned survey shows no significant statistical differences to this purpose, either amongst the various age brackets or amongst groups with a different degree of culture (Eurescom, 2001: 20). However, there is a tendency amongst adolescents and young people up to the age of 24 together with the over 55s to receive the mobile phone as a present more often than the remainder. These data are also confirmed in the analysis of results according to their activity: 44.8% of students state they have received the mobile as a gift.

Acquiring a mobile through another person frequently becomes the deciding moment of long pressure and negotiation between parents and children. Other times, this acquisition describes the new figure of parents as “technology suppliers” in a suitable fashion. Amongst the many duties that parents feel they have nowadays is also the firm conviction that not only must children be guaranteed a good education and training but also great familiarity and competence or skill in the use of information and communication technology.

Receiving a mobile as a Christmas present or for a birthday or confirmation also often arose as a subject in the qualitative survey, "*The mobile phone between orality and writing*", (Fortunati, 2001) which offers the results of 30 non structured interviews with Italian adolescents. From these interviews, it turns out that only a few of the respondents had invested their own money in purchasing a mobile and one fourth had bought it using parents’ money. It must be said that the mobile phone has had the great luck of lending itself well to being a good gift object. In fact, it is provided with all the requisites necessary to become a present of the masses: an affordable price, great prestige in adolescent eyes, because it is technology, and it is a technology that makes it manifestly “adult”. It is true that sometimes it has turned into a poisoned apple for those who gift it, because it has brought with it an amount of expenditure that never finishes. According to what respondents have stated, in two thirds it is the parents who pay for the children’s cards whilst only one third of respondents meet the mobile’s cost with their own pocket money.

Another aspect arising in this latter survey is the parents’ concern about providing their children with a mobile in order to guarantee continuous contact with the family. Perhaps, by giving a mobile phone to children as a present, parents hope that this instrument may in some way help them to overcome the communication vacuum which there often is in the parents/children relationship. But, unfortunately, this lack of communication is structural and is therefore difficult to remedy in their children’s adolescent age. In fact, the latter no longer consider their parents as suitable interlocutors for the profound, private part of their communication as they deem that members of their peer group are such. As a result, communication between adolescents and

[2] We thank the members of EURESCOM 'P'903 "ICT Uses in Everyday Life" for permission to use part of the survey material. It will be quoted in the following pages as Eurescom, 2001.

parents tends to be fundamentally formal. It is the male or female soul mate or members of their similar age group who take on the role of repositories of what up till yesterday they told their parents or at least their mother. This break up is necessary because, in order to grow, to gain their own psychological autonomy and become adults, children must progressively cut off all the points through which the “command” (taken only as being the weight of expectations hoped for from them) and parental control pass. That is to say, adolescents should corrode the the power of the father and the mother over them and, since information is power, the first thing they block is precisely information.

In reality, the mobile in children’s hands may solve problems of organisation and logistics, calm down parents’ anxieties, such as knowing where their children are, but, however, it cannot solve the problem of quality and the flow of communication between parents and children, as was stated earlier. The development of a sense of responsibility also passes in a limited fashion through the use of this instrument, inasmuch as most of the time, adolescents “mime” with the mobile in a public area and simulate autonomy and responsibility without actually enjoying them. Having often received the mobile as a gift from parents and being financially supported by them for their own use, adolescents are obliged to show continuous gratitude and acknowledgement towards too generous, permissive parents. As Harding recalls, Harding (1951: 216-219), adolescents, on the other hand, must gain the right to their own independence, to self-determination, to sexuality, etc. in the sense that they must “steal such rights” from parents because only this way may they really become adults. In the same way, their parents “mime” with a respect towards freedom as for the children which, in fact, they are very far from expressing, since they actually often would seem to feel the obligation of closely monitoring them.

Reverting to the manner of acting on the acquisition and use of the mobile, there also exists a type of unhappy acquisition. This is the case whereby perhaps it was thought that the technological object were easier to use, that it would take less time to learn how to use it, that there would be less need than expected or even that it were not necessary. However, the average of "*dropping-out*"[3] or no longer using the mobile on a European level is very low: in fact, just 2.1% of those who were using it, which means that mobile users are stable or, better still, faithful consumers (Eurescom, 2001: 12). Particularly in Italy, the percentage is still lower: 1%. It is important to point out that *dropping-out* is not recorded in the age bracket from 15 to 24 whilst the average of those no longer using the mobile in the 25 to 34 bracket is 1.28 (Eurescom, 2001: 37).

Thirdly, access can be gained to the mobile phone without having one. In Italy, this phenomenon whereby a mobile is rented or shared is modest in dimension (6%) (Eurescom, 2001: 33), and involves women 10% more than men. This manner of access is a little less frequent in the over 55s but significant differences are not posted between the different age groups.

It is clear that the person who decides not to have a certain technology in his home, although using it outside, is somehow seeking to maintain distances, i.e., he wants to limit his involvement with the technical object or is obliged to limit it, as in the case of many adolescents. Amongst these people, there may be cases of those who use it intensely at the work place and so do not wish to use it in their private life: the case of boys and girls who sometimes use a friend’s mobile because they have none of their own; or the case of those who are in no way interested in using it.

[3] The authors use the English term "dropping out", in a similar way, to transfer the concept of someone who stops studying to someone who no longer uses the mobile. (T’s N.).

A variant of the relationship between access, ownership and use is constituted by those who have more than one, and they are not a few. It can be seen from the Eurescom report that almost 10% of those answering on a European level have more than one mobile. According to the ISTAT (2000) annual report, the family nuclei with two mobiles in Italy has risen from 16.9% in 1997 to 31.1% in the year 2000, those with three mobile phones from 2.4% to 8.5% and those having four or more mobiles from 0.4% to 3%. Therefore, out of the 64.9% of Italian families that have a mobile phone, 42.6% have come to have more than one and, therefore, only around one fifth do not own more than one.

The increase in the number of mobile phones in families does not actually represent just the dissemination of true, own multi-possession, but has also opened up the possibility of personalised use for those who apparently availed of a mobile phone at home but could not use it (see adolescents, young people and women), because it belonged to another member of the family.

Users design the frontiers of use for the technological object even in terms of time spaces and meaning. Today, for example, we know that the mobile telephone is theoretically used with no limits as to time (24 hours a day), it is on less time and has an average use of a certain number of minutes a day. Therefore, there is generally a major reduction in time with respect to use. As we shall be seeing later, the young generations, however, are the least severe when laying down time limits in mobile use.

On the other hand, as regards space, users have perhaps extended the dimension designed by the technological supply. In fact, born as the technology of mobility, the mobile has always been used at home and in many other enclosed places (friends' homes, in shops, supermarkets, waiting rooms, lectures, restaurants, meetings, work places, schools, etc.). This happens because it has become the personal medium par excellence and because, with the technical possibility of being able to locate a person or that he be located himself, the user found it hard to accept remaining on the outside and has therefore followed his interlocutors inside buildings, claiming a reciprocal search on all sides. Also, when tracing out the mobile phone's spatial frontier, adolescents particularly have demonstrated a special capability to broaden it (see use at school, for example).

Users also determine what functions of the technological object to use, i.e., how to make it live. And here the process for reducing and simplifying the technological object which has been developed on a mass level would seem much clearer. Surveys undertaken (Chiaro, Fortunati, 1998) show how competence and skill in using the mobile phone is generally low, except for young people, which we shall be seeing more in depth a little later.

Sometimes, breaking onto the scene of a certain type of user is what broadens the medium's function: for example, the use of the SMS by adolescents and, in particular, by adolescents who give proof of this skill and enjoy this function more than their contemporaries (26% compared to 20%).

The negotiation that takes place with the technological object between producers, distributors and vendors on the one hand and users on the other, also extends over ways of learning, i.e., how future users or aspiring users learn to use a certain technology. Social learning processes involving the use of communication technologies and the construction of information networks, of a technical support and of reinforcement which it is necessary for everyone to build around the use of these technologies in general have totally transferred, transformed and modified the learning process as it had been

conceived and formalised by technology producers.

Reading the instruction manual in fact proved to be only one of the strategies applied by users to access the use of the medium, as results from a Telecom Italia survey on "*La competenza d'uso delle Nuove Tecnologie*" (Fortunati, Manganelli, 1999b: 130) and is also an unappreciated strategy (the general opinion attributed to manuals was a mediocre 6.05). In fact, the instruction book is often seen as an ulterior obstacle to learning the use and not as an efficient aid.

It is deduced from the same survey that, unlike other media, the mobile was used above all at home. Indeed, the first source of learning the use of the mobile phone was not at the work place (8.6%), and much less at school (0.0%), but in the domestic environment (63.9%), with no significant differences between the various age groups. Apart from at home itself, friends' houses also have a certain relevance as a mobile phone learning place (12.8%). Learning linked to novelty and games is shared with friends. Perhaps more than providing in depth learning, a first contact can be tried and had in friends' houses. Finally, the role of the shop, i.e., the sales point, is modest as it works only in a limited fashion for the mobile phone (8.2%). However, as we shall be seeing hereafter, those who teach in the domestic environment are above all adolescents and young people.

The introduction and use of the mobile phone in new Italian generations.

In order to adequately reconstruct the introduction and use of the mobile phone in the new Italian generations, we shall basically use three large quantitative surveys: The one already mentioned "*Rapporto annuale dell'ISTAT*", the Italian Institute for Statistics, "*Il Primo Rapporto sulla Communicazione in Italia del Censis*" and the aforementioned "*Rapporto Eurescom, 2001*". We shall also make reference to the Telecom. Italia survey mentioned earlier on "*La competenza d'uso delle Nuove Technologie*" (1999b).

According to the Eurescom (2001) study, young people/adolescents in Europe in the 15 to 25 age bracket and young adults from 25 to 34 years of age have the highest rate of introduction in the mobile phone (77.2% and 75.8%) (Eurescom, 2001: 14). This rate drops a little to 70% from 35 to 44 years of age and then considerably reduces. In Italy, ownership of mobiles has been the highest in Europe, at over 75.2% of the population (page. 14). This result is significantly higher amongst men than amongst women (more than 80% for the former and below 70'% for the latter) (page.15) and the higher the age, the less the percentage of those with the possibility of accessing or owning a mobile.

With respect to the remaining European countries studied in the survey, the relationship Italians have with the mobile phone has its own specific importance if age is taken into account. In fact, on the one hand, there is a heavy drop as from 55 years of age and, on the other, 10% more of 15 to 44 year olds own a mobile than persons of the same age in other European countries (page.17). The introduction to mobile phones amongst young adolescents under 14 years of age is 90% higher (page.16).

Apart from having most mobiles on a European level, Italian adolescents and young people have been familiar with them for a longer time in comparison with the other countries (3/4 years on average). And, in addition, this familiarity is heavily influenced by age and by the degree of culture. In Italy, as against the remaining European countries, there is an obvious correlation between the first to adopt the mobile phone and users who most use it.

Here if we consider mobile users instead of owners, according to the Eurescom (2001) report, it results that the youngest groups in Italy (under 30 years of age) use the mobile most compared to the 74% indicated for persons between 30 and 60 years of age and 34% for the over 60s. Always referring to Italy, users are an overall 76.2% of those answering (compared to a European average of 67.8%), of whom there are more men than women both in our country and the rest.

Italian young people and adolescents are not only those with most mobiles compared to other age brackets but are also absolutely those who make most use of them. Those in the 15 to 24 years of age bracket are those who spend most time using the mobile: 5 hours, 6 minutes and three seconds, followed by adults between 45 and 54 years of age (5.09), young adults between 35 and 44 (4.56) and young people from 25 to 34 (4.18). Considering users as a whole, the average amount of time spent on the mobile in Italy is undoubtedly the highest (4.33), compared to the remaining European countries (the European average is 4 hours). It is also important to stress that in our country men talk a little more on the mobile than women (Men = 4.35, Women = 4.30), although the difference is not very significant.

Other major data on the introduction and use of the mobile phone relating this time to young people's families are given by the Istat 2000 report. It is important to emphasise that this report describes an increasingly more fragmented telephony situation in Italy. In fact, over the last decade, the telephone has followed the logics of the mass media (television and radio), i.e., a broad diversification of supply and demand. The dissemination of the mobile phone – their substitute – has occurred in fact with, on the one hand, logics of reinforcement (besides the fixed telephone, the family also has a mobile) and on the other, of replacement (the fixed telephone has been substituted by the mobile). This is why nowadays there are families having both media, families who only have the fixed, families which only have the mobile phone and families with neither.

14.9% of families do not have a fixed telephone and this figure has been increasing compared to 1993 when it was only 9%. But this increase does not mean in fact that there is a will to leave and not enter the world of telephony, since of these families without a fixed telephone, 62.5% have a mobile. This all means that, in three years, 6.2% of families have renounced the fixed telephone to have only a mobile, which is not a just a few.

These are families formed by young single people, workers, who, having to choose between the fixed and the mobile phone, opt for the latter, since it falls better into their style of communication life. Although these families are in a phase of the life cycle subject to notable changes, they are probably more transitory situations. These families disappear from the telephone directories with all that means to institutions and remaining citizens, and are submerged in the small network of their mobile number.

The last Istat report offers other interesting information on families with children, adolescents and young people. Families with the highest rate of mobile phones is still in the year 2000 those with children, (confirming the results of previous Telecom surveys: Fortunati, Manganelli, 1977, 1999a). Both normal and single parent families are on the same level. There is obviously pressure from adolescents and young people who inexorably push the family towards increasing communication technology equipment. But there are also other reasons on the part of parents: a) life with children is becoming increasingly more complex and difficult to manage and therefore generates a large variety of communication requirements and imposes the need for logistic rationalisation; b) as we said earlier, there is a

Table 1

Use of various communication media

Media	14-18 years	19-24 years	25-44 years	45-64 years	Tot. users
Base	**77**	**239**	**292**	**492**	**1400**
Telephone	72	224	565	465	1326
	93,5%	93,7%	95,4%	94,5%	94,7%
Fax	5	42	143	81	271
	6,5%	17,6%	24,1%	16,5%	19,4%
Answerphone	10	56	140	96	302
	13,0%	23,4%	23,6%	19,5%	21,6%
Cordless	11	49	105	85	250
	14,3%	20,5%	17,7%	17,3%	17,9%
Mobile phone	28	91	243	137	499
	36,4%	38,1%	41,0%	27,8%	35,6%
Call warning	11	36	82	42	171
	14,3%	15,1%	13,8%	8,5%	12,2%
Three way conversations	6	10	5	3	24
	7,8%	4,2%	0,8%	0,6%	1,7%
Call transfer	2	15	30	15	62
	2,6%	6,3%	5,1%	3,0%	4,4%
Auto-disabling[3] of teleselection	0	2	10	3	15
	0,0%	0,8%	1,7%	0,6%	1,1%
Meter telereading	4	6	15	6	31
	5,2%	2,5%	2,5%	1,2%	2,2%
Memotel[4]	3	13	20	12	48
	3,9%	5,4%	3,4%	2,4%	3,4%
Radio	64	190	462	329	1045
	83,1%	79,5%	78,0%	66,9%	74,6%
Television	68	207	488	428	1191
	88,3%	86,6%	82,4%	87,0%	85,1%
Video	54	146	340	207	747
	70,1%	61,1%	57,4%	42,1%	53,4%
Video	35	113	258	164	570
	45,4%	47,3%	43,6%	33,3%	40,7%
Pay television	3	9	26	16	54
	3,9%	3,8%	4,4%	3,2%	3,9%
Satellite television	3	5	23	13	44
	3,9%	2,1%	3,9%	2,6%	3,1%
Cable television	0	4	8	1	13
	0,0%	1,7%	1,3%	0,2%	0,9%
Computer	45	93	198	89	425
	58,4%	38,9%	33,4%	18,1%	30,4%
Laptop computer	3	7	21	14	45
	3,9%	2,9%	3,5%	2,8%	3,2%
Printer	22	49	136	60	267
	28,6%	20,5%	23,0%	12,2%	19,1%
Internet	9	16	49	21	95
	11,7%	6,7%	8,3%	4,3%	6,8%
E-mail	1	12	28	16	57
	1,3%	5,0%	4,7%	3,2%	4,1%
No answer	0	9	15	13	37
	0,0%	3,8%	2,5%	2,6%	2,6%

widespread idea amongst parents that giving a technological "dowry" to the children is important because they are thus better prepared when they have to lead their own lives.

But, from the time when the use of a mobile involves the complex context of the communication environment, it must be stressed that young people and adolescents not only make use of this communication instrument but many others also.

It can be seen from the aforementioned 1999 Telecom Italia survey on "*La competenza d'uso delle Nuove Tecnologie*" that in fact age leads to there being several differences in the use of all media (table 1). Adolescents are in the front line of use of the video, computer and console and three way conversation. With respect to the mobile, the rate of adolescent use is a little less than those in the 25 to 44 years of age bracket who most used it in 1999. This rise in adolescents as a strong group of users is a novelty compared to previous data (Fortunati, Manganelli, 1997), where the heavy role in the use of communication technologies was played by youngsters and young adults.

*Percentages have been calculated per column and more than one answer is possible (multianswer)

Panorama of skills

From the very moment when, with use "the object aids us and opposes the limits of its very constitution", writes Giampaolo Proni (1999: 15), its features have to be analysed as a "possibility of

4. "Autodisibilitazione della Teleselelzione" is a service offered by Telecom. Italia enabling customers to renounce the possibility of making inter-city calls from a telephone. This service was conceived, for example, for parents with adolescent children who want to make calls to friends outside the urban limits and thus avoid hefty telephone bills T's N.)

5. "Memotel" is the automatic answering service offered by Telecom Italia. (T's N.)

interaction". This is precisely why it must be stressed how possibilities of interaction generally tend towards a heavy simplification of the mobile, as well as other objects of technology, although adolescents and young people, as we shall see, are the bastion of a more complex and articulated interaction with this medium (and not only with this).

The 1999 Telecom Italia survey on "*La competenza d'uso delle Nuove Tecnologie*" specifically studied the aptitude with which users activated new technologies. Examining which of the multiple mobile functions is most used by users, the conclusion is drawn that the answer "I only use it to call and receive calls" comes from almost 50% of users, as well as "I know how to use memory functions". Other skills, such as using the telephone's various utilities, the answerphone, security functions, services/functions for monitoring the length of calls and/or their cost, recording the last numbers called, sending or receiving written messages, are used by between 30 and 40% of users. One fourth say they know how to use additional services whilst the remaining skills are below 10%.

Adolescents in particular state they know how to send e-mails from the mobile whilst young people between 19 and 24 are the most numerous in claiming they know how to send and receive written messages, use memory functions, record the latest numbers called, use the different utilities, functions and cost/length of call monitoring services. In all these cases, adults are the least numerous and also the least numerous in using additional services, security functions and network selection where there are no differences with the other age groups.

In conclusion, the different ages determine skills in mobile use with adults at a disadvantage (45-64 years of age) and adolescents and young people (table 2) at an advantage. The impression is currently being given that the area of incompetence is growing: if until a short time ago the most numerous age bracket was older people, it would now seem that adults are also included therein with the social consequences on which it is advisable to commence reflecting.

Table 2

Skills in the use of the mobile phone by age

Mobile telephone	15-18 years	19-24 years	25-44 years	45-64 years	Total users
Base	**28**	**91**	**243**	**137**	**499**
Send an e-mail	6 21,4%	11 12,1%	19 7,8%	6 4,4%	42 8,4%
Associate it with the computer	1 3,6%	4 4,4%	18 7,4%	3 2,2%	26 5,2%
Associate it with the fax	2 7,1%	6 6,6%	22 9%	3 2,2%	33 6,6%
Use information services (stock market indices, time,etc.)	5 17,9%	12 13,2%	23 9,5%	8 0,7%	48 9,6%
Send and receive short written messages Brief writings	13 46,4%	43 47,2%	80 32,9%	20 14,6%	156 31,3%
Use the automatic answerphone	9 32,1%	49 53,8%	95 39,1%	37 27%	190 38,1%
Use memory functions	14 50%	57 62,6%	126 51,8%	40 29,2%	237 47,5%
Use attached services (call warning. etc.)	11 39,3%	32 35,2%	64 26,3%	27 19,7%	134 26,9%
Record the last numbers called	13 46,4%	47 51,6%	89 36,6%	31 22,6%	180 36,1%
Use the phone's various utilities (tones. languages)	11 39,3%	50 54,9%	108 44,4%	29 21,2%	196 39,7%
Use security functions	12 42,9%	39 95,1%	96 39,5%	33 24,1%	180 36,1%
Use monitoring services/functions Control duration/cost	11 39,3%	44 48,3%	98 40,3%	22 16,1%	175 35,1%
Use network selection	7 25%	21 23,1%	45 18,5%	14 10,2%	87 17,4%
To telephone only normally	13 46,4%	30 33%	111 45,7%	85 62%	239 47,9%
Others. don't know, don't answer	0 0%	4 4,4%	1 0,4%	6 4,4%	11 2,2%

* Percentages have been calculated per column and more than one answer is possible (multi-answer)

[6] Standard deviation is, in statistics, a measurement of the heterogeneity or diversity of data measured with the average. (T's N.)

In order to delve deeper into an examination of skills in using the mobile telephone in the world of communication, we have compared it with the main media (telephone, fax, automatic answerphone, television, remote control, video, computer and internet). We have calculated two different rates of skills for all these media: the first shows how many functions of a certain media people know how to use (table 3). On average, almost four functions of the mobile and video are activated (3.94 and 3.98), whilst a little more than five functions of the remote control are used (5.02), of the fax 4.80 and of internet 4.46. In any event, answers both for the mobile phone and fax are generally dispersed (standard deviation[6] = 3.26 and 2.66), since there are people who know how to use many functions and others only a few. As regards the mobile, the result in this grading is in an intermediate position with respect to skills in use.

Table 3

Number of functions used by responders for each of the media

Media	No. fc proposed	Maximun number of functions used	Average number functions they know how to use	St. Dev.	Number of users
Telephone	17	14	3,13	2,38	1393
Fax	10	10	4,80	2,66	258
Automatic answerphone	5	5	2,80	1,46	290
Mobile phone	***14***	***13***	***3,94***	***2,26***	***488***
Television	6	6	2,46	0,97	1175
Remote control	7	7	5,02	1,33	1188
Video	5	5	3,98	1,17	705
Computer	10	10	1,64	1,86	435
Internet	8	8	4,46	2,10	84

The second rates of skills for each medium were calculated by including the number of functions we propose which each respondent stated he knew how to activate. This count may vary between 0 and 1. (0 = no function activated and 1 = use of all functions). Average rates are shown in table 4 where, in the "general count" column, we have the average rates of skill for each of the media, calculated by considering the whole sample (all respondents giving a valid answer to these questions were included and irrelevant answers, those who replied "I don't know" and those who did not answer were excluded). On the other hand, the "user count" column includes the rates of those who stated they use each of the media.

These rates correspond to the measurement of the use of the functions as indicated which means that, with 100 being the number of functions in a medium, a count of .184 shows that of all that medium's functions, only 18.4% are used on average.

Table 4

Average rates of skills in using media

Medios	General count	St. Dev.	N	User count	St. Dev.	N
Telephone	.184	.140	1393	.184	.140	139300
Fax	.117	.263	1387	.480	.266	258
Answerphone	0.89	.219	1388	.561	.285	290
Mobile phone	***.099***	***.193***	***1389***	***.282***	***.233***	***488***
Television	.348	.212	1384	.410	.166	1175
Remote control	.624	.322	1383	.736	.200	1174
Recorder (Video)	.344	.360	1358	.663	.196	705
Computer	.047	.117	1395	.149	.170	435
Internet	.030	.131	1389	.496	.234	84

The total rates of skill contain dual information: to what extent a medium has been disseminated and how much it is used in a skilful fashion (number of functions activated). Hence, a low count may on the one hand indicate that a medium is not widespread but used with a good level of skill (for example, the fax) and, on the other, that is very much disseminated but used in an unskilled manner (the telephone, for example)[7]. Besides these total rates, we therefore have another type of rate calculated bearing in mind subgroups of each medium's users, thus eliminating information due to measuring its dissemination from the skill count.

7. This result may seem contradicory. In fact, fixed telephone sets in most cases are provided with many functions (memory of most frequently called numbers, repetition of calls, repetition of the last number selected, sound volume regulation, etc.) which are very little used and are often unknown. This is why the main function is so strong as to cover up all the rest.

Therefore, in this case, rates refer only to skill and not to dissemination and so there may be, for example, high rates on scarcely disseminated media, such as the case of Internet.

We firstly consider the average rates relating to the whole sample. It can be seen from these data that: 1) media where there is a certain amount of skill in their use amongst the population are essentially those describing the area of television (62.4% of the functions of the remote control, 34.8% of the Television's and 34.4% of the video recorder's are used). The telephone comes far behind with 18.4% and fax with 11.7%. The remaining media, including the mobile phone, are at a very low level of skill in their use. But what is surprising is the low count obtained in the telephone, despite its wide and not recent dissemination. Why is this skill so low? Probably because on a mass level, a command of the telephone is not accepted, it is generally considered as the easy medium par excellence.

On the contrary, observing the second series of data on the media user subgroup, it can be seen that the medium undoubtedly used skilfully by users is the remote control (.736), followed by the vídeo (.663) and the automatic answerphone (.561). Internet and the fax also achieve a good position (.496 and.480). We find the computer (.149), preceded by the telephone (.184) and the mobile phone (.282) in the bottom positions.

To complete the table of skills in use, respondents were also asked to give a valuation on the degree of skill in the use of communications technology and on its ease of use. With respect to the mobile, age diversifies opinions in favour of the young generations but only those referring to skill in use and not those of ease in use: young people and young adults (M = 3.99 and M = 3.87 on a scale from 1 to 5) believe themselves to be more skilful than other age brackets.

Therefore, if it is true that young people are the most skilful, it is also true that this greater skill is included in a fabric of generally scarce skill in the use of the media. It is seen from these first analyses that there is widespread under-use of the mobile. This limited social skill in using the latter is generally and probably due to its recent dissemination. But this result makes us wonder whether the mobiles the market offers us are predetermined to be useless with respect to consumers' requirements. The answers given by respondents to another question may perhaps clarify this point. We asked them what they would have preferred, whether a medium with many functions or one simpler to use, but with few functions.

The preference as expressed was undoubtedly the second type (58.9%), whilst the first was only preferred by 33.8% (7.1% were doubtful). This means that almost 60% of consumers prefer a simple medium, even though it has less functions, whilst there is a part of the market, one third of the respondents, who aspire to have a much more articulated technology with accessories. Different answers were given according to different ages (table 5). Those who would choose a medium with many functions prevail amongst adolescents whilst adults want a medium with less functions but easier to use.

Table 5

What medium would be chosen according to age

Medium chosen	15-18 years	19-24 years	25-44 years	45-64 years	Total sample
Medium with many functions	47 **61%**	103 43,1%	215 36,3%	108 22%	473 33,8%
Medium with few functions but easier to use	27 35,1%	121 50,6%	325 54,9%	351 **71,3%**	824 58,9%
Don't know, don't answer	3 3,9%	15 6,3%	52 8,8%	33 6,7%	103 7,4%
Total	**77**	**239**	**592**	**492**	**1400**

$C^2_{(3)}$=68.61. p<0.0001.

To conclude, skill in using communication technologies is not widespread in society. But this in itself is not a limitation or a vacuum to be filled but most likely a large part of the market is showing precise signs of a will for non-competence. The same error as made with the positive things of the audience, always judged in negative terms, must not be repeated. Just as the media are frequently appreciated by the public for the low communication activity they demand or involve, communication technologies would be appreciated if less skill were required.

Learning to use the media in adequate fashion often involves time and causes fatigue which particularly adults and older people are not willing to experience because it seems too much like work obligations. Reducing this fatigue then may be a sensible objective. It would therefore be necessary to make devices with various features, with several levels of difficulty in learning and using or two versions of one and the same device: with few functions but easier to use and the other more difficult but with more functions. Always bearing in mind, however, that the new generations are not only the most skilful in using New Technologies but also aspire to complex technologies, even though difficult to use.

However, it must be stated that neither under-use of a medium's functions automatically turns into less consumption thereof nor, on the contrary, does skilful use turn automatically into greater consumption. Likewise, it has not been said that there is a close relationship between acquiring a complex medium and a high level of skill since, on the one hand, there is an offer nowadays of a small range from which to choose and, on the other, because when purchasing, the medium's complexity may play a symbolic role. It is this complexity which is currently a new item of social prestige for many young people. If, some time ago, for example, it was the mobile phone in itself which was the attraction, today it is the mobile which can also be used as a remote control, from which e-mail messages can be sent and so on. It matters little if afterwards these functions are not used nor even learned. The important thing is to have and be able to show a terminal which has the possibility of performing such functions.

In any event, it is worth underlining that amongst the mobile phone functions wanted, some are closely linked to Internet and its potentiality, the other great communication technology in expansion. And these are what young people most want. In the "*Primo rapporto annuale sulla comunicazione in Italia*" of the Censis, (2001), when asked the question "What would you like to do with the mobile phone?, 42.9% of respondents answered "to listen to music" (with a rate of 70.4% amongst young people), one third to be able to "carry out bureaucratic practices easily", one fifth "watch television on the mobile phone screen", "connect to Internet", "exchange video images" (with a higher number amongst young people), 17% "to chat" (41.6% of young people), 16.6% "read the news", 15.9% "make purchases" and 9.4% "see Stock Market prices"..

Routes taken by young people to learn how to use the mobile phone

Adolescents and young people have been the players in a kind of Copernican revolution in the field of New Technology, first learning the mobile. Above all, they have given life to a vast process of self-taught social learning in the field of technologies, becoming explorers of this new "know how". Neither the school system nor parents nor other agents were able to transmit this new knowledge. Or they did so partially, since it is true that certain skills were passed during the early period from work places to homes. Only a person

who had learned to use communication technologies in his job practised such skills at home, sometimes becoming the one to teach other family members interested in learning. But the circuit was quite restricted in that first period.

However, the spatial environment where learning how to use new technologies, first the mobile phone, was always undertaken very soon moved to the domestic sphere. Adolescents and young people have turned the home from a place where know how came in from the working world into a place which became an important laboratory for the production, experimentation and strengthening and developing of this knowledge. This is how they have reversed the course of the flow of "*know how*" towards the use of new technologies. They have completely inverted the traditional education relationship which taught them in their role as students, turning from pupils into teachers. But let us proceed in order.

The field of action was initially residual, both in the dissemination of use and in learning the mobile phone and other New Technologies, since this process came from work place rejection. However, the situation has been developing very rapidly, since the domestic market has turned from being residual into a quite respectable market until becoming very important, perhaps even more than the rest. Consequently, routes for learning how to use new technologies have also changed at the same time. In fact, the results of the aforementioned 1999b Telecom Italia survey show that a large part of learning is acquired in the family through a relation. 38.2% of respondents who stated they used at least one technology, in fact, confessed to having devoted some time to teaching some member of his own family how to use it (Table 6).

Table 6

Time devoted to teaching some members of the family how to use some New Technology, by age.

Have you spent some time?	15-18 years	19-24 years	25-44 years	45-64 years	Total years
Yes	44	102	199	76	421
	65,7%	50%	40,2%	22,7%	38,2%
No	23	102	294	259	678
	34,3%	50%	59,4%	77,3%	61,6%
I don't remember	0	0	2	0	2
	0%	0%	0,4%	0%	0,2%
Total	**67**	**204**	**495**	**335**	**1101**

$C^2_{(3)}$=31.68. p<0.0001.

Let us endeavour to give a brief profile of people who have devoted time to teaching the use of some New Technology to some member of their own family. Let us recall that the data to be presented now do not comprise the whole sample (1400 respondents) but a sub-group formed by those who said that they use at least one of the New Technologies. It can be seen from the answers given that adolescents who have earmarked time to teach how the New Technologies are used to other members of the family are proportionally much more numerous (always according to table 6).

In more specifically examining those to whom teaching had been directed, we find the mother in first place as a pupil (36.6%), followed by the father (22.6%), the son (21.4%) and then the daughter (18.3%). Behind come the brother (12.8%) and the sister (10.2%). Drawing up the rearguard come the wife (11.4%) and then the husband (6.9%) (Table 7). Subsequently, when analysing the replies to this question in order to more accurately rebuild the family's New Technology learning dynamics, we discover that more girls than boys teach their own mother (43% of girls and 32% of boys). Adolescents and young people who, above all, are students, more often teach both parents (71% amongst them have taught the use of New Technologies to the mother

and 43% to the father) (always in Table 4). Once again, this confirms the new role taken on by young people in connection with New Technologies.

Table 7

Whom they have taught to use them, by age.

Whom	15-18 years	19-24 years	25-44 years	45-64 years	Total years
Base	**44**	**102**	**199**	**76**	**421**
Mother	34	60	57	3	154
	77,3%	58,8%	28,6%	3,9%	36,6%
Father	13	40	40	3	96
	29,5%	39,2%	20,1%	3,9%	22,8%
Wife	0	3	31	20	54
	0%	2,9%	15,6%	26,3%	12,8%
Husband	0	0	15	6	21
	0%	0%	7,5%	7,9%	5%
Son	0	8	47	35	90
	0%	7,8%	23,6%	46,1%	21,4%
Daughter	0	6	41	30	77
	0%	5,9%	20,6%	39,5%	18,3%
Brother/s	7	15	30	1	53
	15,9%	14,7%	15,1%	1,3%	12,6%
Sister/s	10	13	19	1	43
	22,7%	12,7%	9,5%	1,3%	10,2%
Grandfather	1	2	0	0	3
	2,3%	2%	0%	0%	0,7%
Grandmother	0	1	1	0	2
	0%	1%	0,5%	0%	0,5%
Nephews/Nieces	0	1	3	0	4
	0%	1%	1,5%	0%	1%
Others, don't know, don't answer	0	6	11	5	22
	0%	5,9%	5,5%	6,6%	5,2%

* The percentages given were calculated per column and there was more than one possible answer (multi-answer)

Transmitting knowledge of the New Technologies to brothers/sisters obviously does not refer to either adults or older people but to the other ages with no differences between them. In particular, adolescents are those who teach sisters more than the others, mainly being students (20% act in this way)

These data speak very clearly. Teaching has become a movement above all totally *vertical* and less *horizontal*, i.e., it passes more from one generation to another than within the same one.

However, this has changed direction and rises from below upwards. In fact, the first teachers are children who teach parents how to use these technologies. They particularly teach the mother because there is obviously pressure from adult women to want to understand and learn to use these new technologies and, in addition, mothers are probably more "predisposed" than fathers. Parents' teaching children of both sexes, with preference however, for male children, is only in second place. This teaching is more restricted between brothers/sisters: in fact, the brother teaching the sister is less frequent than the husband teaching the wife.

Therefore, the home is outlined as a nerve centre not only for transmitting knowledge but also learning how to use New Technologies. In fact, in the same survey, 33% of those who stated that they had undertaken it or had taken it outside the home declared they had learned to do things with New Technologies at home, which they then used or intend to use in their job. There is a greater proportion who state this with more emphasis amongst adolescents (71.4%) than amongst adults (25.5%).

Young people are the most positive even in the evaluation of the use of New Technologies. In fact, respondents from 15 to 18 years of age experienced learning with greater pleasure than adults (45-54 years of age) who found such learning significantly less easy.

Table 8

Evaluation of learning New Technologies, by age.

Learning was	15-18	19-24	25-44	45-64	F	g.	p<l.
Easy	3,10	2,99	2,93	2,83	4,83	3,1085	0,003
Pleasurable	3,22	3,15	3,06	2,96	5,00	3,1077	0,002

* The scale of answers ranges from 1 (not at all) to 5 (very)

Virtual fraternity. Meaning of communication with the mobile phone in the social life of adolescents.

In respondents' opinion, the presence of New Technologies in family life has not led to great changes in the sphere of family communication. According to the results of the same 1999 Telecom Italia survey, for 59.9% of respondents, communication is unchanged, for 13.4% it has become more skilled, for 8.6% it has become more difficult, for 5.6% less warm, for 4.3% less direct, for 2.4% more artificial, for 1.7% more oriented towards a purpose and for 1.2% it has become more frustrating. The young generations maintain that communication has become more skilful, more than other generations do.

It is concluded from all the foregoing that the opinion expressed on family communication is essentially positive both on the part of the young generations and on a general level. The other survey mentioned several times here "The Mobile Phone between orality and writing" (Fortunati, 2001) has allowed this issue to be studied in greater depth in relation to the mobile.

In fact, the mobile phone has made it possible for adolescents to maintain and sometimes widen their communication (and social) network often surprisingly. Indeed, the mobile has allowed adolescents *to build a sort of virtual fraternity* which is transmitted not with living together, but through the word. These live together in the sense that they know, minute by minute, what one is doing and what the other is doing in places far from where they are. The mobile phone allows this only child generation to replace the brothers and sisters they do not have, at least on a virtual level. With respect to the only child, adolescents are obliged to live in families which are adult communities, where boys and girls of their own age rarely exist. The lack of brothers and/or sisters is a large wound in socialisation and, therefore, in communication since it does not let the only child communicate, socialise and grow in a stable fashion in a peer community. They have parents who are adults, from whose control they defend themselves and in whose forms of expression and behaviour they do not recognise themselves, because they are not like them. This is why adolescents always flee from their family when they go out on a trip together on Sundays or during the holidays or even at a meal during the week. Because getting together with a SMS or through a mobile phone call for them becomes a way of feeling really accompanied because they can really communicate without the lack of understanding that often marks generation communication between parents and adolescent children.

The broadening of adolescent contacts inside the group of their same age and the dissemination of what is private and intimate in such contacts lets us see how the world of sons' and daughters' communicative sociability has become submerged, in fact, under a layer of stone and escapes from parents' sight and, therefore, control. The latter do not know who contacts their children nor who they contact and do not even know what is said through these contacts. This means that, despite the intentions of control over their children by parents, it is always more obvious that children's *communicative sociability is being increasingly affected by the mobile phone*.

Verbality and/or writing in the mobile phone

The written message is asynchronous, it postpones production (the time when it is written) which differs in time with respect to enjoyment (the time when it is read). Asynchronism leads to writing alone and reading alone, with no type of

immediate contact with the interlocutor (Ong, 1977,1982; Iser, 1987). In fact, the other is addressed, but is not got hold of, as happens when we communicate orally. The SMS is also less compromising than a verbal exchange because, in this case, the social process for negotiating the sense and building the meaning is second degree since it is diluted in time and space (and only belongs to the individual). On the contrary, dialogues demand immediate communicative negotiation with the interlocutor and participation in the conversation process. In other words, dialogue imposes a different reality and, therefore, a disposition towards mediation and agreement between different interests.

To a certain extent, the SMS is the ideal conversation in this narcissistic society but, from another point of view, it may seem to be a family, school and social dysfunction incapable of making the new generations grow under the flag of discipline and constant application to acquire complicated skills such as writing. The dissemination in society of skills such as knowing how to read and understanding different types of messages or knowing how to write them is increasingly more limited, to the great perplexity of the school authorities proposed for educating the overall. The great success of the SMS has surprised scholars somewhat because it has demonstrated how generations manifestly recalcitrant to all forms of written expression are revealed, on the other hand, as inclined to send short, but written messages. In fact, these youngsters have changed from a way of writing formally, subject to judgement throughout the whole school life, to writing to each other, to a sort of written dialogue, of written orality. And precisely because it is written on a small, more concise screen.

.However, the writing nesting on the mobile phone screen is already probably altering ways of thinking, particularly of those who daily send millions of messages: adolescents. From being recalcitrant to writing, at least at school, youngsters are becoming jugglers of the written language, constrained as they are to struggling in a space of a maximum 160 characters. This is where they are seen to experiment in new semantics and syntax with the essential nucleus of the word, removing vowels, using numbers and mathematical signs, without disdaining the crasis[8]. Amongst other things, since writing is nothing more than “language made visible” as De Saussure writes, the word in everyday life and the practice of communication are more visible.

But, what are the reasons for this SMS passion appearing in adolescents? In our opinion, they have discovered that this type of writing may in some way be functional with their demands for communication. The difficulties in a first approach somehow disappear, it enables them to keep a certain physical distance, even in confidence and in private, etc. As was said earlier, these adolescents are an only child generation and so have not had the chance to continuously communicate with their peers since they were small. They have done so in a fragmented fashion, in the nursery. Then, at home, when they were children, these adolescents have had to face an adult world which talked in adult language and, therefore, in a language strange to them, not completely comprehensible, which placed them in a psychological minority. It has been said that there was no on-going education in these adolescents’ past for communicative exchange in their peer group reinforcing not only linguistic competence but also the exercising of dialogue which will socialise them and teach them to live their own existence with that of the rest,

8. "crasis", in grammar, is the contraction young people use in profusion in their messages. (T’s.N.)

Therefore, these generations of television, radio and telephone youngsters who carry inside them the stigmas of one-way communication (TV and radio) and circular communication (telephone and computer) in their manner of communicating with each other, which stigmas show a low communicative skill, often blocked expressivity, a lack of being accustomed to everyday dialogue in the family, a custom of superimposing facts with the production or consumption of communications, could not help but find their preferred communication model in the SMS, i.e., in the technology of writing through the mobile phone.

However, when the adolescent has to communicate with his parents, he undoubtedly chooses to telephone with the mobile. There are several factors driving youngsters to use this communication medium with the father or mother. Parents often are not only the providers of this technology but are also those that cost it as they mostly pay the telephone card. Parents expect an answer from their children, i.e., that the latter contact them through a telephone call. In addition, parents are almost always unable to send or receive messages. But, above all, close family communication, linked to primary socialisation is, on a foundation level, of such a verbal form that it becomes practically inconceivable to change to the written mode. Parents want to hear their children, want to feel their voice, i.e., the state of mind and emotions, they have the need for an instant, immediate communicative exchange because they administer the fundamental, priority part for organising everyday life and socialisation. With respect to the needs and modes of family communication, the SMS is also too random, when it arrives is never known nor whether the other has seen it. In conclusion, it has too many shaded areas to become a communication method which may usually be employed by children in relations with their parents.

The mobile telephone also allows children to be territorially located: this demand for spatial connection with children is very important because territory is perceived on a social level as increasingly dangerous and insidious: With respect to the concerns and fears generated by the public area, the mobile is seen as the magic aid enabling parents to immediately locate children and vice-versa, to give (obtain) protection, defence, a guarantee of safety in mobility, especially at night.

The use of the mobile phone call, however, is not directed only towards parents, but also to friends who are called when in a hurry or in an emergency, when the interlocutor himself does not know how to write messages or has no money and/or feels like hearing his voice, when a long conversation is needed, to clarify things, or even just to say hello and find out how the other is. Finally, the phone call is fundamentally made by neophytes, i.e., youngsters who have hardly laid hands on a mobile. However, if needing to speak with friends, many adolescents prefer to use the house phone, to save money.

Despite everything, overall, adolescents prefer the message to the call because less time is lost (the call's structural communication procedures are often conceived as too long); because money is saved (another big argument); because it is more certain to arrive, even though the mobile is not next to the person receiving it; because it is more private, more secret (those present cannot hear it). The message is chosen more often than the call when they do not have the bravery to say things out loud (for shame), or when it is wished to confide in someone. Messages are usually sent to say good-night, which makes us understand how, through the message, adolescents are discovering the possibility of elongating the duration of the telephone day. Before the message, there was a kind of night-time "firewall" on telephone telecommunication for adolescents and

youngsters. As can be seen from the survey shown in the book "*Gli italiani al telefono*" (Fortunati, 1995: 45), communication after ten o'clock at night is allowed in families only in an emergency. Nowadays, with the mobile phone and the SMS, adolescents can overcome this prohibition and find company, communicate until time for sleep. This other possibility is interesting and very important for youngsters who go to bed mostly in an individual bedroom and have no brothers or sisters to share the before sleep time. Speedily hitting the buttons is a skill of which many youngsters feel proud and which they acquired by sending messages. But they are also sent for amusement or to while away the time.

In general, the SMS are preferred because they cost less. A surprising result of this survey is discovering the hitherto unheard of role of great savers, as played by adolescents. The complaints of parents over the excessive use of the fixed telephone, the bill for which was paid by them, went unheard. (Burcet, Fortunati, Manganelli, 1998). Therefore, since adolescents did not pay the telephone costs and, in addition, it was very difficult for them to have it for their own private use, they found using the fixed telephone with tellings off and threats from their parents limiting. Today, with the mobile phone, the situation has completely changed. The medium has turned from collective to individual; cards are often bought by adolescents with their pocket money and, therefore, the amount the mobile is used can be easily monitored and cannot be curbed by parents who, depending how they view it, may not buy any more telephone cards. The adolescent in this new situation is becoming a cold economist, an extremely sesnible consumer, who moves to the written message because less is spent, who calls from public phones when necessary, who changes from one operator to another to save money and, in short, who takes advantage of a thousand strategies to pay less.

The brief SMS dictionary.

According to the Dossier SMS Chronos (July 2001) (www.groupechronos.org), *15 thousand million* SMS are exchanged every month the world over (i.e., 47,000 a minute compared to 7 million e-mails)[9]. When using the SMS, everyone, including young people, have had to struggle against a maximum of 160 characters, abbreviating words so that the greatest number possible fit in (Colombo, 2001). This language compression has given ingenious results, as can be seen in the brief dictionary given below (Omnitel, s.d.):

IAP In altre parole (In other words)
MIC Manteniamoci in contatto (Let's keep in contact)
NCN Non conta niente (It doesn't count anything = It doesn't matter)
NoVelOr Non vedo l'ora (I can't see the time)
IOC In ogni caso (In any event)
IboLu In bocca al lupo (In the wolf's mouth = Good luck)
L8Xam Lotto per Amore (I fight for love)
FDT Fuori di testa (Out of your head)
FIFT Fatti i fatti tuoi (Do your things = Mind your own business, Look after your affairs)
Fse Fatti sentire (Be alive)
Drin Fine dell'ora di lezione (End of class time)
CPP Chiamami per piacere (Call me please)
CTF Completamente tagliato fuori (Completely cut off = Send someone to Coventry, Do less)
D6 Dove sei? (Where are you?)
CoSSba Correggimi Se Sbaglio (Correct me if I'm wrong)
CiVeCat Ci vediamo a casa tua (We'll see you in your house)
BLP Butta la pasta (Throw the pasta = Prepare the pasta)

9. 45,000 million, according to Ericsson estimates in February, 2002. See Ciberpaís, 28 February, 2002, page 6, and article by Santiago Lorente in this same issue of the magazine. (T's N.)

BlaDT Parlami di te (Tell me about yourself)
AMMP A mio modesto parere (In my modest opinion)
AP A proposito (By the way)
AXO Arrivederci per ora (Bye for now)
6SMSF Sei sulla mia stessa frequenza (Your on my wavelength)
SDG Su di giri (Up with turns = To be accelerated, go at a hundred)
QPR Quando posso rivederti (When can I see you again?)
CTNCEN Come te non c'è nessuno (There's no-one like you)
CIN Ci incontriamo? (Shall we meet?)
6TuXMe Sei tutto per me (You are everything to me)
MaQMiAm? Ma quanto mi ami? (How much do you love me?)
CCPO Ciao ciao per ora (Bye, bye for now)

The techniques most used to invent acronyms and abbreviations are as follows:

- Omit all items of the phrase that might be considered superfluous, like articles and prepositions;
- Replace empty spaces between one word and the next, beginning the following word with a capital letter;

- Abbreviate words not writing them in full, but only what make them understandable;
- Remove vowels (there are less than consonants and can therefore be guessed);
- Abbreviate words, replacing parts of them by letters or mathematical signs

Conclusions

The analysis carried out here has brought to light the pioneering behaviour of adolescents and young people in relation to new technologies, as well as new routes for new generations in the field of self-learning and of transmitting knowledge to other generations, especially adults. However, if we bear in mind the various psychosocial and economic indicators relating to the everyday life of adolescents and young people (unemployment, atypical ways of working, difficulty in emotional relations, etc.), it would seem to be understood that these generations do not manage to use their "*know how*" of technologies to acquire greater social power. On the contrary, this unheard of capability with its complexity runs the risk of simply becoming a greater, sophisticated social ghetto for them.

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MORE THAN JUST A TELEPHONE
The Mobile Phone and Use of the Short Message Service (SMS) by German Adolescents: Results of a Pilot Study

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Based on a theoretical outline on the role of on-the-move communication via the telephone, this paper discusses the specific function of the SMS in the case of young adolescents in Germany. The relevance of written mobile communication is related to other types of mediated interpersonal communication (e.g. e-mail). Results of communication research which focus on the uses and gratifications of interpersonal media are presented to create a theoretical frame of reference for the study of SMS functions. Results from a pilot study are then reported where the main target group of the service - adolescents aged 14 to 18 - were interviewed about their daily SMS use. Results indicate an integration of SMS into adolescent's daily communication behaviour, but functions of the telephone and e-mail are only partially replaced. SMS gratifications are grouped together into factors known from earlier research, but do not explain much of the variance in the frequency of SMS use.

Key words: Mobile phone, GSM, SMS, text messagerie, information and communication technologies (ICT), information society, youth, socialization, communication, primary group.

Introduction

Converging media applications would seem to determine development in the field of communication technology. In the case of the internet as the most prominent example, convergence is closely associated with a general globalisation of communication. But in contrast to U.S. dominated internet communication, another technology is being promoted particularly by European consumers: the mobile or cellular phone which was labelled "handy" in Germany - a rather vivid expression for an increasingly universal tool of communication. Scenarios from science fiction are no longer futuristic regarding forthcoming generations of mobile phones. Equipped with a colour display, these portable multi-media-terminals will enable their users to take photographs and shoot video or to surf the internet - and still call their best friends as well (Reischl & Sundt, 1999). The technological basis for these applications will be formed by the UMTS standard (Universal Mobile Telecommunications System), while the present WAP (Wireless Application Protocol), although not fully accepted, already allows access to the internet (e.g. Eckstein, 2000).

Furthermore, the mobile phone is depicted not only as a new medium for information retrieval but users also have the opportunity to send and receive personal texts via the Short Message Service (SMS). Advertisers have recently depicted this type of written mobile communication as "E-

mail on Your Cellular Phone", because it allows the user to type up to 160 characters and transfer them to a receiver's cellular phone. Stored and displayed on demand, the message uses the permanent connection between the mobile phone unit and the phone net's radio station, where the SMS is incidentally transmitted. Based on a theoretical outline on mobile communication in general this paper especially discusses the specific function of SMS communications using the example of German adolescents. Results from a pilot study are then reported where the service's target group - adolescents aged 14 to 18 - were interviewed about their daily SMS use[1].

The Hubris of Perpetual Availability: Mobile Telephony

For many years the telephone represented a medium of home-to-home communication in Germany. Ten years ago, an empirical study carried out in Berlin proved that more than half of all devices were located in people's living rooms, and another quarter in the entrance hall (Lange et al., 1990, p. 13). Most devices were still equipped with a dial; the share of wireless phones amounted to less than one percent. This situation has changed dramatically during the past ten years. Nowadays, a wireless telephone represents a household's standard outfit, nonetheless it does not permit the speaker to move more than several hundred metres from the basic unit. Thus even the wireless telephone remained domestic.

As early as 1958, a small elite of German telephone users was able to manually exchange telephone calls using what is known as A-net – and buying such a device was much more expensive than buying a VW beetle, about 8000 German Marks (for more details see Wessel, 2000)). The mobile phone therefore served as a status symbol – a pattern prevalent in Germany until the late Nineties. Using a cellular phone in public provided an image of importance, responsibility and financial power to the involuntary spectators (Schneider, 1996, p. 12). The D1 and D2 net technology based new generation of digital mobile phones triggered the dissemination of this technology, leading to more than 23 million users in Germany in 1999 (Anonymous, 2000a, p. 146). During 2000, this number had doubled, demonstrating how the cellular phone has lost its elite image, while at the same time illustrating how short a time status effects last. In 2001, nearly two thirds (62 percent) of all Germans owned a mobile phone, and 74 percent use it for private reasons. In examining the official data of the '*Statistisches Bundesamt*' a rapid diffusion of this medium based on use in German households can be clearly seen. Based on about 82 Million inhabitants and approximately 37 Million households, in 1998, 9.5 percent of all households had a mobile device, whilst in 1999 16.5 percent and in 2000, 29.8 percent had such a medium (Statistisches Bundesamt Deutschland, undated). Whilst the rate at which they spread is not as high as in European Countries, Americans are using the mobile phone more than others. In the USA, the mobile is used 221 minutes per month, in Sweden 204, in Britain 186, in Finland, to take another example, 132 minutes, and in Germany 123 (Anonymous 2000b).

The mobile phone has become a ubiquitous medium: it offers the possibility of reaching others and to be reached by others independent of where the caller and the person called are. Regarding this perpetual availability, however, the relationship

[1] The authors wish to thank Stefanie Steuber (of Erfurt University) for her help in the design of the study, the creation of the questionnaire and the coordination of the field work. We want also thank Mandy Kluge and Julian Gebhardt for carrying out the focus groups.

between being available and contacting others is not symmetric: More than 80 percent of cellular phone conversations are initiated from a mobile device and devices are frequently turned off–- the user seems to be predominantly interested in calling others in periods of mobility, rather than being available any time and anywhere (Lange, 1991, p. 155ff). Although everyone has the right to be unreachable, the spread of mobile phones leads to increasing pressure on those who own such a device to take it along in stand-by mode (Mettler-Meibom, 1994, p. 182).

In spite of the rapid spread of the mobile phone there are also people who do not want such a device – and not least are fighting against the presumed consequences for health. Not only in this respect but also in a similar fashion to the early years of the ordinary telephones, the question arises: "Who needs the mobile phone at all and for what reasons?" Umberto Eco (2000) displays an ironic understanding as regards those who need the mobile phone due to physical handicaps and health problems, as it allows for making immediate emergency calls. The same is true for persons using the device because of conclusive professional reasons – and (ironically also) for adulterers who may receive secret messages without the risk of being caught by members of their secretaries' families . On the other hand, Eco (2000, p.83) criticises people disturbing others by "chattering about this and that with those friends and acquaintances they have just left some minutes earlier" – or those who strive to demonstrate in public how popular they are.

The ubiquitous availability evoked by the medium often leads to a perception of individual obtrusiveness. But the omnipresence of cellular phones in our society also produces public obtrusiveness, sometimes even public annoyance (for details see Burkart, 2000, p. 218). Indeed, the mobile phone, its ringing and also communicating what is private in public is the most obtrusive of media. The mobile phone represents "at once a symbol and impertinence in daily life" (Kemper, 1996), as private and intimate topics become part of an involuntary public audience: And this "audience" is never given a choice as to whether it wants to listen or not: "People speak on the phone in front of large crowds, touching on topics that were formerly discussed in private rooms or at least in a phone booth. [...]Ringing and its reply disturbs all conversations with persons present. Undisturbed meetings and respect for follow-creatures would seem a dream from the past" (Lehnert, 1999, p. 89/90).

However, for some time now the type of public-ostentatious user has a heavy load to bear: more and more spaces are being declared as mobile *phone-free areas*, like non-smoking-areas (see for instance Strassmann 2000), even the royal palace of Queen Elizabeth II. (Schilly-Strack, 2000, p. 17). Use is prohibited, of course, in aircraft and hospitals, but again, the dependence of these restricted areas on culturally defined peculiarities must be considered: Although it may seem inappropriate to phone while eating, a flat refusal would be inappropriate in Italy, where "Italians stand no nonsense when their telephoning is concerned" (Holzamer, 2000, p. V1/1). In the U.S., an aggressive form of resistance can be observed on the "*cell phone rage*" pages in the internet (http://www.phonebashing.com): The protagonists steal devices from people phoning obtrusively in public and prove their proceeding on videotape. Furthermore, the use of cellular phones can be technically obstructed with what is called a "Handy-Blocker", which is not allowed in Germany (Anonymous, 1998). In passing, a German 'Handy-Hate-Page' also exists in the Internet.

The "Re-Invention" of the Telephone: Written Communication via the Mobile Phone

In August 2000, more than seven billion short messages were sent all over the world[2] – a figure that illustrates at least the quantitative relevance of this new communication medium. A third of all messages are generated in Japan; in Europe, Germany leads with more than a billion messages per month (Brandmaier & Girlie, 2000). Specifically: In the year 2000, 14.8 Billions SMS messages were sent in Germany, involving a growth rate since 1999 of 163 percent. Women send more SMS messages per week than men: 12.5. Of this population, 77 percent send 1 to 15 messages and 60 percent 1 to 5 messages per week. In comparison, men send 10.2 SMS messages a week. For 72 percent of female and 70 percent of male users, the possibility of sending and receiving SMS messages is highly important (for further information see: xonio.com).

With regard to SMS, the mobile phone represents a perfect example for *intramedia convergence*, because it integrates functions of verbal and written communication that were distributed over different media up till now. By bridging between these different media, *intermedia convergence* is also enhanced. Different media refer to each other and carry on the stimuli given by others ("cross media") that may finally lead to a convergence in content. Using SMS, messages may be sent from a computer to a mobile phone and vice versa. But apart from the technical limitation of the number of characters transmitted, the main difference with communication via E-Mail is, obviously, that the receiver is not a computer user but a mobile phone user.

[2] According to Ericsson estimations, at the beginning of 2002 there were already 45,000 million (See Ciberpaís, 28 february 2002), and no doubt this figure has sharply increased when this English edition is being published (July 2003). See algo the fist article by Santiago Lorente (editor's note).

A graphic illustration for intermedia convergence is given by the "160 characters" competition, introduced by a German publishing house on its website. The organisers request "SMS literature in a minimum space" in the "mobile phone accustomed format of 160 characters". The most ingenious messages were published on their website and rewarded with the symbolic prize of 160 German marks (Anonymous, 2001b). This example further illustrates that the forced reduction in expression may stimulate creativity leading to original language and symbols. And sometimes even politicians take part in this process (Neubacher, 2001).

The example of the cellular phone clearly proves that a technology almost never reaches its final state but is permanently "re-invented" by users – especially when new options for use are added (see also Rice & Rogers, 1980). As a consequence, the relevance of telephoning as a social activity and the relevance of the telephone as an artefact undergo permanent transformation. With the SMS, the mobile phone mutates to a multifunctional device including the option of sending and receiving texts. In a first step, the revision of telephone adoption may focus on the dialectic interplay of telephoned and teletyped communication; the problems and limitations of telephone communication call for solutions which may pose new problems themselves (Hoeflich, 1998, p.212). One of these problem areas may be described by the aspect of obtrusiveness.

Mobile phone users are interested in receiving calls when the device is turned off (answering machine function), but also may wish to receive messages in a less obtrusive manner. The solution is represented by the SMS "Silent Text Messaging", where written communication enables information to be received almost synchronously and less obtrusively. Only a discreet "beep" signals the incoming message, a sound that is suitable in

many situations of private and public life, e.g. when the setting makes immediate response impossible, as when politicians are involved in a conference (Neubacher, 2001). The need for less obtrusive communication media explains the success of Electronic Mail, the most popular internet application, and - together with e-mail - SMS expresses a changing media etiquette where even unannounced phone calls are regarded as an annoyance. Freyermuth (2000, p. 97) reports an emerging "*Digital Communiquette*" with a set of basic rules: "Whenever possible, you should prefer digital communication to analogue and asynchronous communication to synchronous. Above all, you should not call someone if you could send an e-mail or a telefax instead. Telephone calls interrupt the receiver's rhythm of life, no matter if he or she is working or talking with others, whether he or she is eating or occupied with even more intimate things. Continuous unannounced calling is annoying in the digital era and differs only slightly from sales representative visits. "Obviously, SMS offers a convenient solution for both problems by announcing a call or making it unnecessary because the basic information was already included in the message itself, and thereby offers the possibility of a private contact with other distant people in the midst of strangers and in non-private situations. "When you have to be silent, you can still send a text message, and the same applies to noisy surroundings. It may be too late at night to make a phone call, but it's never too late to send an SMS message" (Kopomaa 2000, p. 77).

Adolescents and their Use of Mobile Phones

Adolescents and even children have discovered the cellular phone for their own purposes. The annual study published by the '*Medienpaedagogischer Forschungsverbund Suedwest' (2000; 2001), JIM - Jugend, Information, (Multi-)Media (Youth, Information, (Multi-)Media)* shows the following: In 1999, 14 percent of young people between 12 and 19 years of age owned a mobile phone. In the year 2000, this figure reached 49 percent and in 2000 74 percent of these young people own a mobile phone. This also means that more young people own a mobile phone than a computer (this is the case for 49 percent of this age group). Such a rapid spread was supported by the implementation of the prepaid card allowing cell phone use without a basic monthly rate. And, more importantly, the card represents only a certain amount of charges, thus limiting telephone costs - an important argument for parental support for the purchase. Moreover, when the prepaid card has run out, calls can still be received. In the year 2001, 72 percent of young people in Germany did not have a regular mobile phone contract but a prepaid card instead (Medienpaedagogischer Forschungsverbund Suedwest 2001). And the mobile phone is mostly used for sending and receiving SMS messages. Young people (in the 14 – 29 age bracket) send an average of 14.4 messages per week; 60 percent of this group, 1 to 10, 16.5 percent up to 50 messages per week (see xonio.com).

A comprehensive survey of the spread and use of mobile phones by adolescents was supplied by the *13th Shell Youth Study* – although it only captures an early stage of such spread -. In spite of methodological flaws related with the definition of "adolescence"[3], results show that the mobile phone is essentially an urban medium for communication, because in small villages the share of users is smaller. Mobile phones are more

[3] The study is based on 4546 interviews with "respondents from the German population (German and Non-German nationality) aged between 15 and 24 who were able to understand and respond to the questionnaire in German" (Fritzsche, 2000b, p. 352). This definition of adolescence may be problematic when compared to the data of mobile phone use in Germany.

popular among Italian adolescents, while in the general picture there are no major differences between German and Turkish respondents. But a closer look reveals that male adolescents own devices to a lesser degree, whilst young German females own more mobile phones by far. Samples in the former West and East Germany do not differ from each other (Deutsche Shell, 2000; Fritzsche, 2000a, p. 199ff.).

When examining parents' formal education, a remarkable difference between male and female adolescents becomes relevant: Girls whose parents' level of education is moderate or high more often possess a mobile phone than their counterparts with less educated parents. This fact could be explained by the tendency of parents with a higher education to bring up their daughters to be more autonomous and more aware of technical advances, or by the idea that upper class families take better care of their daughters. The financial background may not be a decisive issue however, as among male users, the relationship is reversed. The majority of male users come from lower-class households. Presumably the mobile phone represents a type of "masculinity marker" causing a symbolic effect that disappears with time as other symbols (e.g. a motorbike, car) become more relevant. As a consequence, the ownership of a mobile phone may relate to gender-specific educational methods in different classes (Fritzsche, 2000a, 201). But there is no evidence as yet whether these rather superficial demographic relationships actually represent different ways of adoptng the mobile phone.

Apart from its importance in the day-to-day life of children and adolescents, there is not much evidence of how these young people use the phone and why. Telephone communication (and, accordingly, cellular phone communication) may refer primarily to trivial applications: For adolescents in particular it is used for social appointments and dating. Whilst using a mobility medium, spatial adjustments need to be continually made ("Where are you? At the moment, I am..."). Furthermore, this allocation may serve as a communicative end in itself, explaining why people are called only to tell about their current whereabouts. But the whole field of "telephone socialising" is still largely unexplored (Hoeflich, 2000). We may therefore take that assumptions as made for mobile phone communication may also be true for SMS use.

SMS and Mobile Phone Adoption by Adolescents

The adolescent world is a media world, as various authors have labelled young people in terms of the "@ Generation" (Opaschowski, 1999), the "Windows Generation" (Schwab & Stegmann, 1999) or the "New Media Generation" (Weiler 1999). These attributions not only refer to the different use of television, radio, music or video as made by adolescents, but also emphasise the role of computers and the internet. The wide availability and easy access of electronic media have dramatically lowered the user's age. Hence it is not surprising that the mobile phone is used by children, with devices developed according to their skills. What is known as the "Handy-Generation" in Germany acquires the potentials of mobile communication by playing. Even the obtrusiveness mentioned above is regarded as a challenge, adapted in a provocative manner and turned into a type of resistance to the world of grown-ups. Free from the parental control of domestic telephone use, the mobile telephone takes the role of a 'PT', a personal telephone – particularly in the case of the Short Message Service. The mobile phone is an individual medium because it is not supervised by parents, and short messages resemble temporary entries in a virtual diary, i.e., only

addressed to oneself. In the words of Kopomaa (2000, p. 66): "Whereas mobile phones increase the privacy of phone calls – in spite of the fact that they are made from public places – text messages are by their very nature completely private, except when a message is shared with others by reading it out loud."

Looking at the media from a cultural perspective, Willis (1991, p. 47) states that adolescents are the social group that 'reads' the new media most sophisticatedly: They get inspiration for many different activities, and the media provide and design the dimensions for what young people are and what they want to be. Part of this self-build up is the exploration of opportunities offered by the media in games, and the adolescent group is particularly interesting because the theory of a creative and game providing media adoption seems most plausible in their case. Although the importance of games for the constitution of a society has decreased, games still represent certain subcultures or introduce individuals to these cultures. Explicit media cultures (e.g. Multi User Dungeons) are determined by the features of a game, and among adolescents the most widespread way of using personal computers is for playing games (Weiler, 1999, p. 221).

Similarly, playing with the telephone also has a dual function: on the one hand, the game introduces the media adoption; children learn how to deal with a technological device to include in their daily lives. On the other hand, particular media of interpersonal communication may teach how to respond to the communication partner in a given media environment. Toy telephones and fictitious phoning serve as a role game for practising interaction with others (Oerter, 1999, p. 128). In a certain manner, playing with the telephone repeats ontogenetically what was performed technogenetically – because when the telephone was a novel medium, the approach was also to play games: "The sense of pleasure in playing with a new toy – perhaps a necessary part of the inventive process itself – persisted with users until novelty gave way to routine" (Briggs, 1977, p. 40).

Furthermore, the SMS is not limited to personal communication. From a technical point of view, the service offers an opportunity to contact other users, turning it into a medium of group communication. In Finland, an El Dorado for mobile communication due to its rate of spread, conversations between groups of users via SMS is fully established. For example 'Radjolina', the second largest mobile phone company in Finland, offers what is called a SMS-Chat, where participants take on a pseudonym and may enter different virtual rooms for singles or flirting (Anonymous, 2000a). As a consequence, e-mail communication and SMS compete with each other, regardless of the media convergence with different websites that provide convenient access to SMS.

SMS use: Some Analogisms

Little is known of the uses of SMS and its gratifications, as almost no scientific studies exist due to the medium's novelty. For the purpose of theory building, we will look at the results of earlier studies dealing with related technologies. Our working definition looks at a *SMS delivered message as a type of electronic mail* known from on-line communication. It must be stressed that the limitation to 160 characters sets the main difference, leaving only little space for the message and ruling out the transfer of attached files, pictures or sound. This limitation calls for clear, precise wording, and the use of emoticons (e.g. the different types of *smileys*) seems appropriate. These were mostly observed in their function for

written on-line communication to be completed with non-verbal signs indicating emotions and moods. But their relevance for mutual understanding was overestimated because computer-mediated communication does not necessarily break down when *emoticons* are not used. But in the case of SMS, the benefit of paralinguistic signs for an action-financial communication process becomes obvious. Although not necessarily reflecting the frequency of actual use, some examples are: (for further insight: http://www.netscape.de/computing/topthemen/specials/index; http://www.xonio.com/channels/channelC/features/w_sms_kurz/13.html; www.tomorrow.de/handy/sms/lexikon/0,3381,966964,00.html, regarding a linguistic analysis see Duerscheid 2001):

AKLA = Alles klar? (everything o.k.?)

8UNG = Achtung, wichtige Mitteilung (Attention, important message)

BBB = bye-bye, Baby

BGS = Brauche Geld, sofort! (Need money, immediately)

BIBALUR = Bin bald im Urlaub (I'm on holidays soon)

BILD = Bärchen, ich liebe dich (Little bear, I love you)

BRADUHI = Brauchst du Hilfe? (Do you need help?)

BSE = Bin so einsam (I am so lonely)

DAD = Denk an Dich (I think of you)

DDR = Du darfst rein (You may come in)

DUBIDO = Du bist doof (You are crazy)

DUBMEILE = Du bist mein Leben (You are my life)

DUWIPA = Du wirst Papa (You will get father)

FF = Fortsetzung folgt (To be continued)

GLG = Ganz liebe Grüße (Many lovely greetings)

HADILI = Hab dich lieb (I love you)

HAFSMDWAV = Harry, fahr schon mal den Wagen vor (Harry, drive the car away)

HASE = Habe Sehnsucht (Yearning)

HDGDL = Hab' Dich ganz doll lieb (I love you very much)

HEGL = Herzlichen Glückwunsch (Congratulations)

ILUVEMIDI = Ich liebe und vermisse dich (I love and miss you)

ISDN = Ich kann Deine Nummer sehen (I can see your number)

ISLANO = Ich schlafe noch (I'm still sleeping)

KEINAODI = Keine Nacht Ohne Dich (No night without you)

KO25MISPÄ = Komme 25 minuten später (Coming 25 minutes later)

KSSM = Kein Schwein schreibt mir (Nobody – no pig - writes me)

KV = Kannste vergessen (Forget it)

LAMBADA = Lass mich bitte an dich anlehnen (Let me lean on you)

LAMWI = Lach mal wieder (Please laugh again)

LIDUMINO = Liebst du mich noch? (Do you still love me?)

MAMIMA = Mail mir mal (Write me a mail)

NOK = Nicht ohne Kondom (Not without a condom)

ODIBINI = Ohne Dich bin ich nichts (I'm nothing without you)

Q4 = Komme um vier (Come at four)

RUMIA = Ruf mich an (Call me back)

SDEDG = Schön, dass es Dich gibt (Nice that you exist)

SMILE = So möchte ich leben (So I want to live)

SMS = Servus, mein Schatz (Bye bye love)

TABU = Tausend Bussis (A thousand kisses)

TUS = Tanzen unter Sternen (Dancing under the stars)

UMTS = Unsere Mutter tanzt Samba (Our mother is dancing a samba)

WIWONIAUGE = Wir wollen niemals auseinander gehen (We will never seperate)
WZTWD = Wo zum Teufel warst Du? (Where the devil have you been)
ZUMIOZUDI = Zu mir oder zu Dir? (To me or to you?)

The functional description of letters is universal enough to be valid for its electronic version. Information transport, appeal and self expression represent the genuine and historically rather invariant dimensions of letter communication (Nickisch, 1991, p. 13). Strictly speaking, SMS messages are not letters. Rather can they be compared to postcards. But SMS differs also from postcards, "although their brevity and content are akin to the telegraphic, condensed form of communication used in postcards" (Kopomaa 2000, p. 66). Like e-mail, SMS is a medium for conversation. But research both on letter and e-mail communication in our telematic society is too sparse to give an insight into the possible functions of SMS communication. As organisations are the protagonists when it comes to adopting new communication technologies, most e-mail research has been conducted in the realm of professional media use (e.g. Stegbauer, 1995; Steinfield, 1990; Wiest, 1992, 1994; for an overview: Garton & Wellman, 1995; Rudy, 1996).

According to evidence on e-mail use in private life, the medium is a major factor for maintaining relationships (Schaefermeyer & Sewell, 1988; McCormick & McCormick, 1992; Parks & Floyd, 1996; AOL Bertelsmann 1998; Wellman & Gulia, 1999, p. 182). In their study, Stafford and colleagues conclude that "meaningful relationships are maintained via computer-mediated communication: individuals appear to sustain relationships via e-mail" (p. 666). From this perspective, neither electronic mail nor SMS via the mobile phone can be regarded as separate from other (mediated and non-mediated) communication activities. Moreover, we cannot assume a substitution of one medium by the other. In other words, a person who uses SMS does not necessarily renounce writing a letter.

Possible Gratifications of SMS Use

When a new communication technology enters the early stages of dissemination, researchers and producers are usually interested in the reasons why those who have adopted it actually turned to this medium. We assume that *the motives for SMS use* should be similar to the relevant motives for telephone use. The telephone can be described as the established medium for interpersonal relationship, although how the telephone should be used during the dissemination process had to be clarified (Hoeflich, 1989, p. 208). Irrespective of its potential for making contacts world-wide, the telephone has also remained a medium for short-distance communication. People most frequently call nearby relatives, friends and acquaintances. Telephone use is integrated into existing communication networks; those who have many social contacts call more often (Hoeflich, 1996, p. 219ff). The medium's relevance for maintaining relationships is underlined by the fact that telephone calls most often serve to announce, arrange or cancel appointments.

Rather than examining statistics from large social surveys, empirical studies would seem the most fruitful for communication science when taking a closer look at the details of telephone use and the gratifications obtained from it (e.g. Singer, 1981; Dordick, 1983; Noble, 1987, 1989, 1990; for mobile phones Schenk et al., 1996, p. 203ff). These, what are called "interactive media" represent a special challenge for uses and gratification research, as

their basic paradigm of audience activity can be tested in an authentic setting (Ruggiero 2000). We will hereafter discuss a selection of recent studies, as their proposed set of gratifications was taken up in our own study.

In 1994, Dimmick and colleagues published a pioneering study on "Gratifications of the Household Telephone". A list of 23 gratification items could be condensed into three factors representing the "sociability", "instrumentality" and "reassurance" dimensions of telephone use (Dimmick et al., 1994, p. 655). *Sociability* refers to the process of social integration, while *instrumentality* addresses the process of social co-ordination. As mentioned above, these two dimensions are also relevant for e-mail use, thus bridging different generations of media applications: "The similarity of two of the household telephone gratification dimensions that emerged in this study – sociability and instrumentality – to dimensions of the use of the newer media suggests an homophyly of use between the older and newer interactive media" (Dimmick et al, 1994, p. 659).

Typical for telephone communication is the psychological need for reassurance representing the third dimension. Reassurance gratification items focus on an individual sense of security and the understanding that friends or family members are also secure. The respective telephone calls are mostly short in length - only a few remarks are needed. As the SMS is particularly suitable for this type of brief message, we assume that reassurance would represent an important motive for SMS use as well.

The traditional uses and gratification approach as was developed for the study of mass media was applied in a telephone study conducted by O'Keefe and Sulanowski (1995). The peculiarities of mediated interpersonal communication were considered only in passing, and so it is no surprise that their results focus exactly on the interplay between the different types of media use. It should be mentioned that at least some of the mass media gratifications are relevant for telephone use also, calling for broader understanding of the requirements as fulfilled by the telephone: "The findings indicate that contemporary telephone users seek a mix of interpersonal and mass media gratifications" (O'Keefe/Sulanowski 1995: 931). The authors detected four dimensions in telephone use: *Time management* (e.g. of appointments) and *Acquisition* (e.g. asking for information) refer to the dimension of instrumentality mentioned earlier. The aspect of reassurance is represented in an overall *sociability* dimension, but additionally they found a rather coherent pattern of entertainment which is formed primarily by well-known mass media gratification items (passing time, using is fun, relaxation). There is a clear relationship between this dimension and the game playing adoption of the medium as indicated above. Rafaeli (1986, p. 127) had already suggested extending the uses and gratifications approach by integrating a "Ludenic theory", and so we suggest entertainment and playing games should be considered as two important reasons for SMS use.

The more recent study of Leung and Wie (2000) also identified pleasure as being a reason for mobile phone use in Hong Kong. "It seems that the cellular phone is perceived as a new pleasure phone" (p. 13). Playing games was already mentioned as an important factor in adolescents' adopting media, and this role is confirmed for a new medium like the mobile phone. Altogether seven gratification factors were identified, including four factors known widely from earlier studies (sociability, relaxation, instrumentality, reassurance). Reflecting the use of the mobile phone, this list was completed by *mobility*, *permanent access* and *status*. According to the authors, gender-specific patterns of traditional telephone use are reflected when males prefer an

instrumental use of the cellular phone, while females are characterised by a socio-emotional use.

This basic set of motives can also be found in studies dealing with e-mail communication. Stafford and colleagues (1999) identified interpersonal motives, rational use decisions, professional motives and what are called general reasons for use: Besides maintaining an interpersonal relationship, people mention several gratifications related directly to the features of e-mail communication (e.g. easy handling, low costs, rapidity, efficiency, globality, comfort and its conversationality, allowing for an immediate response).

The connection between gratifications as provided by telephone and e-mail communication was analysed in an integrative study comparing the motives for using different media of interpersonal and mass communication. In early 1998, Flanagin and Metzger (2001) collected ratings from 684 interviewees, and all stated the relevance of each of 21 gratification items for each of nine communication modes. Both sets of items were clustered and mutually regarded as an independent or dependent variable for analysis. The results confirm the analogism taken up in the present study, when telephone, e-mail and conversational use of the internet (chat, usenet) stick together in one gratification *cluster* called mediated interpersonal communication. This gives good reason to allocate SMS communication in the context of person-to-person internet applications, e-mail and (mobile) phoning as pointed out above. Mass communication media (television, books and magazines, newspapers, internet information retrieval and internet information-giving) form a second cluster, and the third cluster is represented by traditional face-to-face communication alone. The latter was described as the most adequate option for almost all media gratifications, while mediated interpersonal communication is preferred particularly for purposes of "social bonding": Contacting others, providing them with information, solving problems and feeling less lonely are mentioned as the main motives for use. E-mail as well as the telephone are most suitable for maintaining relationships (for results in detail see Flanagin & Metzger, 2001, tables 3 and 5). These types of gratification need to be considered when we examine the SMS representing a new text-based form of mediated interpersonal communication.

A Pilot Study: Research Question, Method and Sampling

Up to now, we have endeavoured to point out the relevance of the SMS for communication research from quite different perspectives. Describing it as a kind of "mobile phone e-mail", we stressed aspects of mobility and functionality, the relationship with earlier media for interpersonal communication and different motives for use and adoption by adolescents, representing a primary target group. This broad approach offers an extensive set of options for an empirical analysis of the SMS phenomenon. As a result, our pilot study which will be reported hereafter, covers nothing more than a small section of the various questions opened in this field. Because of the early stage of research in the latter, we cannot draw many conclusions from literature or previous studies, leading to a more explorative proceeding. In a first step, we will clarify some basic patterns of SMS use and how they relate to adolescents' social and individual features. In our second step, we will focus on the uses and gratifications approach to determine the dimensions of SMS use motivation, in order to assess the peculiarity of SMS representing a new medium for interpersonal communication.

Obviously, we will not be able to consider all the facets of SMS communication as described above, but focus on selected items of the adoption process within the adolescent mobile phone user group. Whilst we will primarily report results from a quantitative survey among younger Germans, additional qualitative research was conducted among other populations looking at different aspects of media use in everyday life which will be published elsewhere.

Our working hypothesis states that the unique combination of features as represented by the SMS provides particular gratifications to adolescents, which

- stand out from the dimensions of telephone use due to the accuracy of messages required, e.g. for purposes of reassurance or every-day life needs like making appointments;
- relate especially to mobile phone advantages like mobility and permanent availability;
- are influenced by the adolescent's style of taking to a novelty, namely the "pleasure phone" pattern including having fun, entertainment or flirting by SMS; and
- differ according to gender-specific use in this age group.

These assumptions formed the starting point for a survey carried out in July 2000 among 204 adolescent users of mobile phones. Face-to-face interviews were conducted in public places or youth care institutions[4] but we do not claim representativity for our results, as our sampling procedure does not match the criteria of random selection. Furthermore, we could not develop criteria for a quota sample because there was only little data available on the demographic structure of young mobile phone users. Thus we may only speculate that the level of education in our sample may be higher than average with 43 percent of respondents going to high school, compared with 32 percent of pupils at a "Realschule"[5] (degree after ten classes) and 25 percent of adolescents being in an apprenticeship. 45 percent of pupils were male and 55 percent were female; their age was 16.4 years on average. Of course, there is a connection between age and education in this population, as apprentices tend to be older than pupils.

Mobile phone ownership is a prerequisite for SMS use, which is why we had to collect data on the communication framework of respondents first. According to our data, adolescents aged 16 and under who have only a small amount of money to spend predominantly use a prepaid card and purchased their mobile phone a short time ago. With increasing age and cell phone experience, the share of adolescents owning a regular mobile phone contract grows. As a consequence, we would conclude indeed that the prepaid card is an important driving force for the dissemination of the mobile phone. On average, our users admitted to mobile phone costs of between 60 and 80 German Marks per month.

About half the fourteen-year-old respondents themselves paid for their mobile communication device - a share which rises up to 70 percent among older adolescents. Nevertheless, even a quarter of the respondents in full legal age relied on someone else paying for their mobile phone (usually parents or the boy or girl friend respectively). The major source of information when buying the device were friends in the case of apprentices, while high school pupils most often received their mobile phone as a present.

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[4]. 4 The authors wish to thank the students of the universities of Erfurt and Augsburg because of their kind participation and the carrying out of the field work.

[5] "Realschule" is fairly equivalent to secondary school, and it ends up at 16 years of age (translator's note).

Advertising and media information seemed rather unimportant for the decision on which phone to buy. All adolescents shared the perception that most people in their environment use a mobile phone - and thus fulfil the basic precondition for SMS communication. Although this assessment may overestimate the actual share, it may serve as an indicator for the widespread dissemination of the technology among adolescents.

SMS uses in an adolescent's daily life: a first insight

There is a special synchronicity between using the mobile phone and SMS. With the former, young people particularly mean to send and receive SMS messages. And it can be proven that the younger the users the more they send such short text messages via their mobile device (see Hoeflich/Gebhardt 2001). The impression that using the SMS is already integrated into the communication behaviour of young mobile phone users is supported by our data (see table 1). When asked about how frequently they perform several communication actions, the respondents named three mobile phone calls per day supplemented by about seven short messages sent as well as received. Even when examining internet users only, e-mail is used less frequently, with about two incoming mails and the same number outgoing per day. Of course, when interpreting these figures needs, it must be taken into account that the intensity of these communication acts varies substantially: The SMS allows the transfer of 160 characters only, while the length of e-mails is not limited and telephone calls can be particularly assumed to provide a richer, denser flow of communication. Patterns involving boys and girls differ only slightly, with a somewhat higher level of SMS use by females and more mobile phoning stated by males. Adolescents going to high school reckon lesser frequency with regard to all the communication actions as given.

An in-depth analysis (no data are given here due to space restrictions) shows that use of both SMS and mobile phones follows the U-curve which is typical for dissemination processes. If we separate our sample according to the time span over which respondents have owned their mobiles, "newbies" display an intensive test period. In the next stage, use decreases a little now that the medium is no longer brand new. But amongst adolescents owning oa mobile phone for more than half a year, there is an increase showing that the medium may have been integrated into the communication routines of daily life.

Table 1

Adolescents' daily communication actions (self-assessment of actions, mean values)

Communication action	N	Total N=194	Boys N=86	Girls N=108	High School N=83	Realschule N=61	Apprentices N=46
Mobile phone calls	190	2.9	3.2	2.6	2.6	3.1	3.2
Sending an SMS	199	7.7	7.3	8.0	5.4	9.6	9.8
Receiving an SMS	193	7.0	6.8	7.1	5.2	7.9	9.2
Sending an e-mail	81	2.0	2.0	1.9	1.6	2.6	2.3
Receiving an e-mail	76	2.5	2.7	2.3	2.0	3.0	3.5

The interdependence of communication acts may be illustrated by Pearson's correlations which obviously reach a high level for the number of short messages (r =.79) and e-mails (r = .85) sent and received. Furthermore, the number of mobile phone calls correlates with all other variables: Adolescents who use their cell phone frequently more often send and receive short messages (r = .40 / .35), e-mails (r = .27 / .24) and more often write letters

(.15). We may assume that adolescents may be characterised as being more or less open to communication, with the number of mobile phone calls serving as an indicator for the use of mediated interpersonal communication in general. Therefore, a rule of reciprocity is indicated, meaning that SMS messages have to be replied to also with such messages but also by a phone call or even by e-mail. A gender-specific use may also be seen in this context: Girls not only write more, they also write longer SMS messages – and they write more letters too (see also the research from Kasesniemi/Rautiainen, undated). They note: "Boys typically do not utilise the entire space of 160 characters but instead opt for messages of about 40-50 characters. On their part, girls stress the fact that the space fills up easily. Girls also criticise boys' inability to interpret SMS messages. Girls say they must write their messages to boys in 'plain language' without too many compressed expressions, references and suggestions."

Earlier studies agree on mobility representing a basic and important option for use of the mobile phone. In contrast, results of this survey show that SMS is used more often "at home" (43 percent). This is also shown by research work carried out by the Xerox Research Centre Europe (XRCE) . They found that 63 percent of SMS messages are sent from the home (Xerox 2001). Less than a quarter of our respondents use the service "while waiting" or in school. When they go out with friends, writing or reading short messages during socialising is nothing special anymore (34 percent); on the other hand, about two thirds of our adolescents feel unnerved when occurring during social activities. And almost everyone who dislikes being disturbed in a conversation by the SMS seems to be aware of the fact that he or she may disturb others too, when sending a short message. Although SMS would seem to be an unobtrusive medium, there is even a feeling of annoyance (see also Hoeflich/Gebhardt 2001). Nevertheless, almost all of our respondents (97 percent) expect a fast response from the person contacted in all or most cases: sending a short message seems to exert strong pressure on the receiver to answer immediately.

As a consequence, SMS communication may lead to what are known as "*SMS chats*", when single messages are exchanged in a series like a dialogue. This type of SMS use, which partly resembles the on-line chat situation, is dominant for more than one third of adolescents. But a larger number of young males sends not more than one message at a time (33 percent vs. 18 percent among girls). Sometimes, *SMS chats* may not be fulfilled because the initial message itself was written when the author was occupied with something else, and, depending on the situation, it may be problematic to keep an on-going "SMS discussion".

The preferred counterparts for SMS communication are the boy or girl friend on the one hand, and the girls' best female friends or the boys' best male friends respectively on the other. More than half the respondents stated that they send short messages to these persons very often (see table 2). Other receivers are normal friends and acquaintances, while parents and relatives are

Table 2

Adolescents' preferred interaction partners
(frequent SMS comunication, percentajes)

I send SMS frecuently	Total N=197	Boys N=87	Girls N=110	High School N=85	Realschule N=60	Apprentices N=49
my boy or girlfriend	50	47	53	42	52	61
My best female friend	40	27	51	35	50	38
My best male friend	43	52	36	34	56	46
Other friends, acquaintances	26	23	28	26	31	16
Parents and relatives	5	3	6	4	12	0
People I have not yetmeet personally	6	6	6	4	9	6

rarely contacted. Due to their being older, apprentices may be expected to have a partner more often, and for them to contact these persons is even more important, whilst pupils at a "Realschule" reckon contact with all groups as most intense.

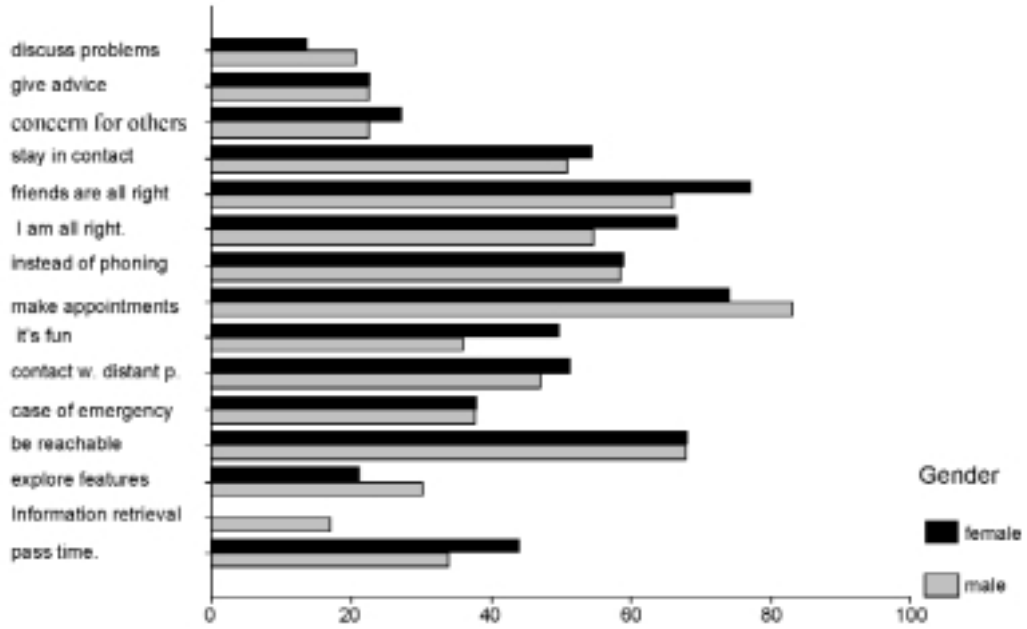
"I got a SMS with the message: 'I do not know you and you do not know me,' and stories like that. And I wrote back and asked: What's going on? Then she answered and wrote that she wanted to get to know me. She was Turkish – and we had some phone calls. Then we met personally and now we have been together two months. Yes, you get to know more and more people… She's a great pal. We meet once a week or so. She is Turkish and can't get out more often".

Superficial contact with others unknown as was already mentioned is not a predominant type of use, because not more than one out of twenty respondents admitted doing this frequently. There is no difference between male and female pupils on that point and, overall, more than 75 percent of adolescents said that they had flirted at least once via SMS. For many, this was "real fun" (31 percent) and another large percentage likes doing this from time to time (41 percent). Acceptance is somewhat lower among girls, where seven percent state that they feel unnerved by SMS flirting.

Based on the results of the earlier studies mentioned above, we developed a set of 15 SMS gratification items that were rated on a five-point scale[6]. Agreement was highest for the statements that the SMS was used for organising appointments and enquiries as to how friends are doing (see figure 1). This emphasises the relevance of the mobile phone and SMS messages for young

Figure 1

Reasons for male and female adolescent use of SMS (percentaje of agreement; ratings 1 and 2 on a five-point scale)



people's outdoor activities - and it is not therefore a medium for little children. This is documented by the following extract from one of the group discussions we held with young people:

B: "I believe that nowadays, nearly 90 percent of Germans have a mobile phone, maybe 95 percent. When you go out, you can even see children from primary school with pretty cool mobiles in their hands calling somebody (...) that´s a little bit extreme, isn´t it?
C: When I go out in the city and see all these ten year old children, just calling somebody with such expensive mobiles (...)I think that these young kids should have chosen at least a cheaper one, if they absolutely need one . I always ask myself, what their parents must earn or what kind of jobs they have? I mean, all these parents can´t be so rich that they can afford to buy their ten year old children such expensive mobile phones!
A: I think that ten years old children don´t really need a mobile.
C: That´s right! They aren´t on tour like we are!
D: A's small brother also has a mobile. And he actually is on tour like we are (…) he is even dressed up like us.
C: I had to consider real hard, whether I really needed a mobile or not. One year ago, I thought not, because of my SCALL. But a SCALL(…) I think, it has become more and more awkward. For example the batteries have gone low very quickly (...)and after all, I thought ok. now you do need a mobile, because it´s a pretty handy thing, when you go out for example. But for ten year old kids it´s a little bit too extreme, I think!

In general, all gratifications that focus on aspects of mutual reassurance seem strongly relevant (stating own well-being, maintaining contact with friends). Furthermore, it is not surprising for adolescents to emphasise the unique selling point of SMS – being reachable at all times in an asynchronous way and being able to interact with those who cannot be met face-to-face. More than half the respondents use the SMS as a functional equivalent of phone calls. Less important, but still relevant for some, are more complex needs like discussing personal problems or giving advice. As regards this aspect, SMS communication limitations may be mentioned (limited number of characters, low user convenience).

Such reasons for use may also vary according to the respondents' gender: girls, as already stated, not only write more and longer SMS messages, they are also more interested in telling others how they are and asking others how they are. And they prefer using SMS for something to do or because it is fun, but they almost never retrieve information via SMS. Although these results may sound stereotyped, boys more than girls like to explore the technical opportunities provided by the technology and arrange appointments with others, while girls display more socio-emotional orientations.

The set of 15 gratification items was analysed with a factor analysis (see table 3). According to our data, the major dimension of SMS use is mutual reassurance – knowing what friends and the boy or girl friend are doing, that they are alright and telling oneself how it feels and what one is doing right now. The second-ranked dimension refers to *keeping generally in touch*, when short messages are sent for dating, simply because it is fun, or if face-to-face contact and phoning is not possible in the respective situation. Almost as relevant is the *availability of the medium*, e.g. in emergency cases, going along with all time availability.

[6] Text of these satisfaction items: I write and receive short messages to: (1) talk about my problems and for receiving some advice; (2) to give advice to others; (3) to know that others care about me; (4) to keep in touch with my friends; (5) to know what my friends do and whether they're OK; (6) to tell others what I'm doing, and that I'm OK; (7) because sometimes I can't use the pone; (8) to set dates and meetings; (9) because it's funny; (10) to keep in touch with persons whom I can't see face to face; (11) to use in case of emergency; (12) to be reacheable all the time; (13) because I like to explore the features of my handset; (14) to get information; (15) to let time pass by when I'm bored.

Aspects of *moral support* like giving advice or knowing that others will remember oneself are not so relevant to SMS communication.

It is worth mentioning that girls are more in agreement with all these motivation items than boys, showing that female adolescents in general would seem to obtain more gratifications from SMS use than males. This is true for all but one set of items: when it comes to fun in use, boys are more interested in exploring the technology,

Table 3

Relevant gratification dimensions of SMS for adolescents

(Factor loadings and factor scores, mean item index; positive value: factor is more relevant; negative value: factor is less relevant)

Gratification dimensions (items/factor loading)	Item mean (n=196)	Boys (n=111)	Girls (n=91)	High School (n=85)	"Realschule" (n=63)	Apprentices (n=51)
Mutual reassurance Friends are all right (.85) I am all right (.80)	2,04	-.04	.03	-.15	.08	.20
Keeping in touch Instead of phoning (.74) Make appointments (.60)* It's fun (.50) Contact w. distant p. (.39)	2,39	-.09	.10	-.02	.05	-.05
Availability of the medium Case of emergency (.77) Be reachable (.69)	2,43	.01	.00	-.28	.26	.06
Moral support Discuss problems (.84) Give advice (.84) Concern for others (.61) Stay in contact (.49)	3,23	-.13	.17	-.19	.28	-.02
Fun in use Explore features (.73) Information retrieval (.67) Pass time (.45)	3,64	.06	-.07	-.29	-.03	.08

* Secondary loading of .38 on the factor "availability of the medium"

information retrieval and entertainment as expected from the results for single items. This group of statements seems rather heterogeneous on first sight, but recalls the fascination as known from internet use, where surfing for information is paired with curiosity as to what will be accessed next and time passes unnoticed (Gruene & Urliings, 1996, p. 495). For this dimension, the difference in factor scores between male and female adolescents is highest, while small differences occur for availability of the medium and mutual reassurance.

Age and the length of mobile phone experience exert almost no influence on the importance of our SMS gratification dimensions. Moreover, a different level of education makes a difference in reasons for SMS use: in their own opinion, all gratification items were more important to pupils at a "Realschule", while pupils from high school give lower ratings for all statements. We cannot rule out the possibility of this result being traced back to a kind of image effect, whether the better educated may be less willing to give reasons for a rather trivial communication act in every day life. Looking at our data only, it would seem as though adolescents going to a high school reject reasons of fun in use and availability, while the latter would seem to be emphasised by pupils at a "Realschule", along with moral support. On the other hand, apprentices focus on reassurance as a reason for using SMS.

To illustrate the role of different aspects influencing the use of SMS, socio-demographic features,

Table 4

Relationship between demographic features, gratifications and other interactions and the frequency of SMS use

(multiple regression analysis; standardised regression coefficients = ß values)

Independent variables	Multiple regression:blockwise included (1)	(1) and (2)	(1) to (3)	Model-parameters (n=134)
(1) Demographic features				
Gender: female	.19	.21	.31	
Education: „Realschule" or apprentice	.38*	.35*	.34*	Model: Block 1
Age	.11	.05	.07	Adj. R^2 = .15
Money available	.26	.30*	.21	F-Value = 4,1*
(2) Gratification dimenions				
Motive: moral support		-.38*	-.30*	
Motive: mutual reassurance		.08	.14	
Motive: keeping in touch		.03	.04	Model: Block 1-2
Motive: availability of the medium		.17	.17	Adj. R^2 = .28
Motive: fun in use		-.12	-.03	F-Value = 4,1*
(3) Other interactions				
Sending e-mails			-.02	
Number of daily mobile phone calls			.30*	
Costs for mobile phone			-.06	Model: Block 1-3
Frequency of letter writing			.12	Adj. R^2 = .32
Use of SMS for flirting			-.07	F-Value = 3,4*

* Due to the preliminary nature of the pilot study, we do not intend any inference on the population of young mobile phone users; for purposes of interpretation we would like to point out that the coefficients marked were identified as being significant for $p < .05$.

gratification dimensions and other communication acts were regressed on the frequency of SMS use (see table 4). When introduced blockwise into a multiple regression analysis, gender and education are strongly related to SMS communication: Female adolescents and apprentices send more short messages, particularly if they have an increasing amount of money available. There is also a positive relationship with the number of daily mobile phone calls; those who use their cell phone more often probably write more messages. There is no connection with e-mail use - obviously, short messages as a sort of "E-mail for your mobile phone" neither substitute for nor enhance the frequency of e-mail writing. But this can also be connected with the fact that no e-mail is available. A slight preference of text-based communication could be assumed because of the higher frequency of letter writing (in contrast see Kompomaa 2000, p. 76), but this effect is confounded with the gender variable (see above).

The ability of gratification dimensions to provide explanations is rather disappointing. Only the preference for SMS communication because of reassurance and availability has a moderate influence on the magnitude of SMS use. The impact of moral support motives which were identified earlier as being generally less important is clearly negative. For this purpose, other communication channels may seem more appropriate; which assumption cannot be tested with our available data. And a more detailed regression modelling that includes single gratification items rather than factor dimensions provides no additional insight (data not displayed due to space restrictions). Taking this all together, SMS use by adolescents was best explained by general demographic features and the affinity to mobile phoning, while the set of gratification items already adjusted to SMS communication did not explain so much variance.

SMS – the future of mediated interpersonal communication?

Our pilot study on the use of SMS by adolescents could not offer more than first hints of how young people adopt this new potential for mediated interpersonal communication. Particularly for adolescents, the mobile phone has turned out to be more than a mere telephone allowing for a mobile use. It is a distinct medium with certain qualities, and a personal medium that (compared to the household telephone) is available for individual communication purposes. For some adolescents it fulfils important tasks in order to organise day-to-day life and relieve them from being tied to the household telephone. One relevant option in this process is the SMS which does not require completely new use patterns. Our study illustrates that the SMS is often used for rather trivial purposes like mutual reassurance and staying in contact, including permanent availability. Except for its mobility (which is already undermined by the frequent use of SMS at home), the SMS displays functionalities which were already relevant for earlier media technologies, especially the telephone and, before that, the letter. With the SMS as an option, phoning or writing letters is not completely substituted. Only a limited part of functions are replaced, for example, when it is no longer necessary to have a more extensive telephone conversation just for making an appointment or receiving a brief sign of life.

A reference frame for the explanation of SMS use may be given by the theory of *gratification niches*. Examining the relationship between the functions of e-mail and the telephone, Dimmick and colleagues (2000, p. 240) stated: "A new medium survives and prospers by providing utility or gratifications to its patrons. In doing so, it may have effects on existing media by providing new solutions to old needs or to more contemporary needs. One way of defining a medium's niche is as

that region of the resource space where it outcompetes similar media." But we are still a long away from the point where SMS follows a standardised and thus expectable use, in order to answer the question of how important the SMS is to every day communication and how this may affect the use of other media. "Feminisation of the telephone" (Hoeflich, 1996, p. 224) would seem to be overruled by a different use of the mobile phone and the SMS, although the socio-emotional part of the media is still a feature of females. Additionally, girls would seem to prefer forms of written communication in general as they also write more letters.

For an explanation as to the popularity of mobile phones and especially the SMS amongst adolescents, future research needs to consider the element of games. To this effect, Kopomaa (2000, p. 70/71) means that "the game playing attitude towards mobile phones is likely to survive into the future. Portable phones inspire users to play with them, and that is precisely the quality of mobile phones which attracts people to the device." Electronic games represent one feature of recent mobile phone devices. And apart from being occupied with one's own phone, communication with others may involve game playing as well. Like some types of computer-mediated communication, the SMS gives an opportunity for anonymous communication. Eventually, the noncommittal written contact implies a certain thrill: According to our study, flirting via SMS is quite popular, because it offers the opportunity to extend the "field of erotic experience" beyond one's own peer group (Baacke, 1999, p. 14). From time to time, our adolescents liked to send a short message anonymously to an arbitrary number and wait for a response.

All forecasts made on the future of new media options require careful reflection. The rapid dissemination of the SMS can easily be interpreted as an ephemeral or seasonal fashion. Regarding actual developments, at least high growth rates have ended. But who would have guessed that the emergence of the internet would reinforce the culture of written communication, no matter how the quality of e-mail or chat communication were appraised? It is surprising that the opportunity to send text messages between mobile phones leads adolescents to write a message - some of whom would otherwise never write a letter or an e-mail in their life. But considering the limited complexity of SMS messages, we cannot assume that writing short messages might be a first step to improving reading and writing skills which are described as a basic prerequisite for the use of new digital and electronic media (see e.g. Schoen, 1998, p. 219). SMS messages are part of new forms of writing lying between the written and the spoken language. It is only a matter of time for this kind of communication to be unbounded by the restrictions of 160 available characters and we will be able to indeed speak of a mobile phone e-mail.

Notes

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The study is based on 4546 interviews with "respondents from the German population (German and Non-German nationality) aged between 15 and 24 who were able to understand and respond to the questionnaire in German" (Fritzsche, 2000b, p. 352). This definition of adolescence may be problematic when compared to the data of mobile phone use in Germany.

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Wording of these gratification items: I write and receive Short messages ... (1) to tell about my problems and to get advice; (2) to give advice to others; (3) to know that others are concerned about me; (4) to stay in contact with my friends; (5) to learn what my friends are doing / if they are all right; (6) to tell others what I am doing / that I am all right; (7) because I cannot use the phone in certain situations; (8) to make appointments; (9) because it's fun; (10) to stay in contact with persons I cannot meet face-to-face; (11) in cases of emergency; (12) to be reachable at any time; (13) because I like to explore the technical features of the device; (14) to retrieve information; (15) to pass time when I am bored.

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TALKING WITHOUT COMMUNICATING OR COMMUNICATING WITHOUT TALKING: FROM THE GSM TO THE SMS

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The mobile telephone is an authentic symbol of identity for a large number of adolescents, even beyond the practical aim of communication. Moreover, the mobile phone has spread in stunning fashion over this segment of the Belgian population particularly due to the high number of commercial advertising promotional and tariff rate operations for young people as undertaken by operators.. The radical change in the tone of advertising in the space of two years illustrates this awareness of the importance of the "youth" market as the mobile telephone sector's companies have realised: after its initial introduction as an indispensable professional tool for young, dynamic "yuppies", the GSM is gradually becoming the instrument around which the circle of friends is structured and family links are maintained. Tariff rates as applied by operators are increasingly aimed at young users, particularly in "after school" use formulas which offer communication at highly reduced rates as from 4.00 or 5.00 p.m. when most adolescents finish their school day to go home. The manner in which the mobile telephone spread so swiftly amongst young people could be interpreted as a consequence of a simple phenomenon of social "copy-catting" whereby the 12 to 18 year olds wished to look like images of social and professional success, i.e., young, dynamic "yuppies". From the marketing standpoint, a manifestation of the success of advertising campaigns and the aggressive promotional tariff rates of the various mobile telephone companies could likewise be seen in all this. But it would appear that a far more complex reality is involved and that certain deep, social phenomena are hidden beneath this mass adoption of the GSM.
After running through the lag of what some now call the "G-neration" or "GSM Generation" with some data, we shall then more qualitatively address certain analytical phenomena which will allow us to explain this stunning spread of GSM and SMS amongst the 12 to 18 year old population.

Key words: Mobile telephone, GSM, SMS, Text messaging, information and communication technologies (ICT), information society, youth, socialisation, communication, primary group.

Some data on the GSM in Belgium

The spread of the Mobile Telephone in Belgium

Far more than Internet, mobile telephony is probably the information and communication technology which has most rapidly entered the day-to-day life of the public at large. Commencing in Scandinavia, the wave spreading mobile telephones immediately extended to the whole of west Europe from the North Sea to the Mediterranean. The GSM's penetration rate in the European Union thus rose from 35% in 1999 to 60% in the year 2000 and it would seem that growth will continue for some years before reaching its ceiling (source: ICTA) Whilst it is true that Belgium has been somewhat at the rearguard compared to its European neighbours since it appears as one of the last countries in west Europe in clearing the 50% users barrier in the last quarter of 2000, it seems that this lag has now been overcome.

With progress as regards penetration rates from 33% at the end of 1999 to 55% in 2000 and 75% at the beginning of 2002, it would seem that Belgium has now leapt onto the wagon of the general European average, whilst the prediction for year end 2002 gives a rate close to 80%.

This 75% of users (i.e. 7.5 million persons) are distributed – according to data obtained from various sources – amongst the three Belgian operators in the following way: Proximus, the mobile subsidiary of the historic Belgacom operator, which has over four million customers (around 55% of the market); Mobistar, with a majority control of France Telecom, which has close to 2.5 million (32%), and Orange, a subsidiary of the Dutch operator, KPN, which has recently exceeded the one million barrier (13%) (Sources: Motorola, INRA, Netcetera, BelGSM, 6 minutes IT & Telecom). In addition, according to operators, it must be stressed that close to 90% of SIM cards are active, that is to say, have been used at least once in the course of the last three months. This percentage of customer activity is one of the highest in Europe.

Amidst the Belgian population, young people show most sensitivity towards this phenomenon since, according to data obtained, the under 25s owner rate exceeds 80% and is now approaching 90%. By adding together the results of various surveys, it may be estimated that between 70% and 80% of the 30 to 40 year olds owned a GSM in the second quarter of the year 2001. It would appear that older people are those who least own a GSM since only one of every two 50 year olds has a mobile telephone. As Specht, Sperandio & De la Garza have shown, this lagging behind in the latter age category may be partly explained by the fact that not “having become used to a certain technology or certain technological or social practices, [...] they are reticent in the use of new technologies which are used, however, by young people and will remain with them when they are older (Specht, Sperandio & De la Garza: 1999, 117). Likewise, the change in day-to-day activities and disappearance of retired people’s occupational constrictions bring with them a modification in communication requirements which perhaps justifies the GSM being used to a lesser degree by the over 50s. In short, certain physical factors (gradual decrease in visual or auditory senses combined with the ergonomic defects of technological objects in normal use) are added to these sociological features and to the generation effect to explain the relative lack of interest of older people in the mobile telephone (Specht, Sperandio & De la Garza: 1999, 117-118; Caradec: 1999).

With respect to SMS messaging, a survey undertaken during 2001 by a trade magazine using a representative sample of 1,095 persons gives an idea of the stunning rise of this medium also amongst the Belgian population. Thus, between 92% and 100% of 15 to 18 year olds regularly use this service (according to the operators). The proportion amongst 19 to 25 year olds ranges between 94% and 97%. So, young people who never send a message are rare and over one fourth (28%) essentially or *only* use their mobile telephone for this purpose. (Sources: "Netcetera" survey, August, 2001 and Motorola-INRA survey, September, 2000). Those *hooked to the mobile* earmark a considerable part of their pocket money to sending messages. However, it would be unfair to claim that these short messages are sent only by adolescents and by young adults since more than 70% of those over 45 years of age also use the service. In all, it would thus appear that less than 87.4% of GSM users in Belgium have regularly used the "Short Message Service" (SMS). The decisive element that triggered the phenomenon in Belgium would seem to be the possibility of sending a message from one network to another after March, 2000. As from then, the number of messages has literally exploded rising in

the case of the Mobistar operator from 48,000 messages in December, 1999 to 68,000 in March, 2000, 833,000 the next month and 1.5 million in April, 2001, to again set a record of 1.75 million messages in July last year, 2001. Proximus, the Belgacom operator's mobile telephony subsidiary has posted a relatively considerable increase, recording 322,000 messages in December, 1999 as against 2.9 million a year later (sources: Netcetera and Le Soir). The success of the SMS is such that it has taken GSM makers and mobile telephony operators who initially saw the service as a small "bonus", a little, funny toy launched onto the market somewhat as an anecdote, by surprise. Today, however, these companies are rivalling each other in ingeniousness to make up for lost time, some proposing accessories (mini-keypads, for example) and others launching software earmarked to facilitating the capture of messages or allowing messages to be sent to several addressees simultaneously and others multiplying services based on the SMS, such as diverse information (Stock market, sports results, telephone bill, weather forecasts, airplane time-tables, etc.), sending personalised sounds and pictograms, various games and even a *chat* service over mobile telephones.

Young people and the GSM: A Portrait of a G-neration

Whilst it is true that numerous magazines, articles and TV programmes are being devoted to this authentic social phenomenon in Belgium, referring to the stunning spread of the GSM and the SMS amongst adolescents from 12 to 18 years of age, there are few serious surveys allowing a more quantitative than qualitative idea to be held as regards young people's behaviour in this sphere, whilst those surveys available are generally carried out by makers or network suppliers whose essential aim is to consolidate their commercial strategy with respect to this particular market.

Thus, in December, 2000, a large GSM maker carried out a survey amongst a population of 300 young people between 12 and 18 years of age (Motorola-INRA survey: "Young people and the GSM, September, 2000). Despite this age bracket being too restrictive and the data now somewhat out of date, certain trends drawn from the survey are worth outlining.

The first as demonstrated by this survey is the very even spread of the GSM between males and females. Even and despite the survey showing that males have been the *prime movers* in this matter, girls would seem to have caught them up sufficiently quickly with a lag of less than two years in adopting this technology.

Amongst young people, 20% received the GSM as a gift, a trend more marked amongst girls (25%) and amongst the 12 to 15 year olds (30%). These few data, which we shall be discussing in more detail, show that in matters of young people's acquiring GSMs in Belgium, two itineraries can undoubtedly be traced out: one is the autonomous purchase, typical of *prime movers*, and the other is the purchase made by parents to restrict the young adolescent's autonomy which is undoubtedly a more recent development but which makes the GSM in Belgium one of the "gift" technologies par excellence as was the watch, the other technology par excellence of social and parental co-ordination in the 70s..

For those who have adopted the GSM on their own account or autonomously, purchase criteria are less utilitarian than identifying. Thus, over and above the price to which 20% are sensitive, it is essentially the make and model which constitute criteria guiding the mobile telephone purchase option for more than 35%. When young people are

asked about the first utility they see in the GSM, 44% state the fact of feeling together, above all, 16% to having access to messaging and, finally, 15% to be able to chat with friends. In regard to these latter two aspects, it must be stressed that figures are higher amongst girls than boys and the mobile telephone's "communication" function would seem to be more heavily confirmed amongst the latter. Over 80% of them use pre-paid cards of the three operators operating on Belgian territory to connect to the network.

The fact of receiving calls, of existing on the network, is strongly valued in the overall population. Thus, rather surprisingly, over 50% of the 12 to 18 year old population are favourable towards advertising sent over the SMS.

With respect to the use of the SMS, the survey reveals that this system would seem to have become preponderant compared to the classical use of the mobile telephone. Thus, in the year 2000, only 23% of the young population used GSM only for making or receiving calls as against 47% using it relatively the same for both its functions and 30% essentially used it whilst discarding messaging. Once again, the survey showed as far as this latter piece of data is concerned, that girls were more involved than boys.

The main advantage of the SMS for 52% of the young population compared to *classical* calls is the possibility of communicating silently. Amongst other advantages of the SMS according to young people, lower costs are the first to be quoted (for close to 30% of young people), the fact that written messages enable emotions to be channelled (17%) and, finally, for 13%, the fun aspect of this communication medium is primordial.

Whilst technologically is limited, the length of messages sent is equally worthy of mention. Thus, almost half of those surveyed send messages 20 words or more long. If some can see in such length a manifestation of the feat of management of which a generation brought up on portable video games is capable, others will see a discreet refuge for more intimate communication which classical GSM use does not allow. Others, finally, may see therein a new medium for young people to while away empty time in the family structure, in the fabric of association or in sport that might give meaning to their spare time.

The GSM and young people: between identity and sociability

The GSM as an identifying object

As seen earlier in certain data, young people's choice is not purely functional nor rational or linked to quality/price of the unit but rather is it linked to aspects having to do with the GSM's appearance, its "look", its make. Each make, i.e., each model, would therefore seem to be the vector of a series of codes and values which, like clothes, a haircut or *piercing*, confer on the phone's owner a sporting image, that of a *good lad*, an adventurer or even a *slave to fashion*). Just like dress and other modalities of corporeal expression which transmit "information on the social characteristics of an individual and on the idea he makes of himself, of others and of the situation " (Fortunati: 1998, 89), the GSM would thus seem to have become an object through which everyone can supply "information on their own identification of gender, their social and occupational position, their ethnic origins, their attitude towards the society in which they live, their own character, their own personality, their own state of mind " (Ibid., 90).

Particularly concerned about their appearance, adolescents are very sensitive to identifying aspects linked to owning a GSM. They have the tendency to hook onto makes and to “appear” rather than “be”, with the purpose of building themselves up socially and settling into their own primary group of friends. In this view, the mobile telephone is inscribed more in the context of dress than utility and is therefore more an object of adornment, appearance or fashion accessory than a communication tool. It is seen in this respect that a current paradox in force, particularly in the world of de-luxe watches, spreads today into the world of mobile telephones: the smaller and more sophisticated, the more wanted and the more they become a sign of social rating, like a discreet but very valuable jewel. Thus, if only a very few years ago it was normal to exhibit the mobile on the trouser belt as though making greater ostentation of social standing, today the trend is more towards discretion, partly due to the effect of advertising campaigns which praise the “educated” use of the telephone (a famous campaign sponsored by Ericsson and shown in cinemas before the film invited spectators to ensure they had turned off their mobile’s ringing tone). Miniaturised, increasingly better integrated into the body through clothes or accessories especially provided to fasten them on, associated with ear-rings or microphones allowing speech in an almost natural fashion and designed with the co-operation of ergonomists responsible for improving their holding and handling, mobiles are truly becoming an extension to the hand, the ear and the mouth. Vibrators which are generally incorporated into all current models also fulfil a role often forgotten in the domain of communication: touching them.

Social identity of the mobile, yes, but also the social identity of the different mobile operators. The differences in the image of the make as transmitted by the three companies currently operating on the Belgian market are becoming increasingly more important. For adolescents, each network would seem to have a well defined connotation, strongly shored up by professional advertising: professional, then familiar and unifying for some, provoking and fantasising for others, humanising and equalitarian for the remainder. The major events which interest adolescents and young adults (concerts, sport, festivals, expositions, student offers, etc.) have likewise become a considerable challenge to companies desirous of maintaining a dynamic brand image. For example, two operators have recently disputed the privilege of being able to sell tickets for the most prestigious concerts in the country via internet or the mobile telephone. Thus, the identifying differences inherent to each network are added to the phenomena of social belonging linked to the actual mobile telephone itself, up to the extent of giving rise to authentic groups or “tribes” of users who share common values or reference points. And this social belonging is further strengthened by tariff rate strategies used by mobile companies which endeavour to “capture” (make captive) the young clientele, often charging large supplements for communications with a network other than their own. Due to these price barriers, communities are formed within each operator’s users and the mobile therefore frequently becomes the “cheap” solution for communicating with a member of another “tribe”.

M. Fize became interested in this social belonging phenomenon which he describes “as a response to the social tie lost, to the vacuum of collective meaning which characterises our post-modern societies. Adolescents recreate their community ties in a fabric which just does not tear. Thus all kinds of communities arise which operate under the principle of closing out the exterior world and constituting a response to the social system which is no longer sustained or which does things increasingly worse" (Fize: 1999, 181). The network becomes the place from where the young person

recomposes his closed territories of the group with which he shares the same values, the same social reference points and within which a certain number of codes circulate in order to be in the group and exist in the tribe. With regard to codes, we shall see that the mobile enables group members to develop a series of abbreviations and secret linguistic signs strengthening the ties of internal belonging to the "tribe".

The Mobile as a Levelling Object

As a symbol of identity, the mobile is so equally for boys as for girls. This is a rare feature amongst the numerous information and communication technologies which have appeared in our homes over the last few decades: whilst internet, another technology which has been spreading very swiftly for some years now, would still seem to be that used most naturally by individuals of the masculine gender, the mobile telephone is equally used by boys and girls. Several hypotheses may be formulated in this respect. The first is that the mobile is a technology for information and communication and, therefore, for "being together", a social value on which heavy emphasis is placed by the feminine population in other surveys carried out amongst young people (6,000 young Belgians questioned on the computer in 1994). A second hypothesis has to do with the way in which the mobile is adopted by girls, which would seem to be different to boys. The mobile amongst the former would seem to be brought in more frequently through the role of parents, as a safety means for controlling the girls' autonomy. In the case of boys, however, adopting the mobile would seem more linked to an autonomous process with this telephone being at once an item for achieving masculine identity and a symbol of modernity.

A third hypothesis may still be thrown in to explain this even spread amongst both genders. On the one hand, the 1994 computer related survey involving 6,000 young people demonstrated the fact that boys are more heavily attracted by technology than girls. On the other, a study performed in 1995 by O. Martin and F. de Singly on the use of the fixed telephone in the family home shows that "girls phone with an increasingly longer duration" (Martin & Singly: 2000, 115). If it is considered that the mobile is to a certain extent the synthesis of the telephone and technology, it might be deduced that if it is equally used by girls and boys, it is so partially because the former feel attracted by the prospects of a social relationship opened up by this communication tool whilst the latter are more interested in the object's technological aspects, i.e., in some of them, in the values of self-assertion that is inherent to the mobile.

The mobile as an object of independence and autonomy

The mobile has forced its way with equal force into both genders and has also made its entry into homes, by the side of the fixed telephone. It is worth immediately asking what are the specificities of mobile telephony compared to fixed telephones. Jean-Phillipe Heurtin has been involved in the French situation since 1998, at a time when mobile telephony was only at the dawn of its formidable development. However, he was already announcing "the emergence of a relative specialisation of networks" and the appearance of three large user categories: those hooked only on the fixed line, those only depending on the mobile line and a third intermediate category grouping together the pertinent hybrids who at once use the fixed and the mobile" (Heurtin: 1998, 40). Continuing with this analysis, Heurtin drew out

several differences linked to actual communication in itself and, more specifically, to duration and types. It would appear these differences have been maintained and even increased with the spread of the mobile. Thus, the average “two or three times shorter” duration of mobile communications in the home compared with conversations of the same kind on the fixed telephone has been a typical feature of mobile telephony since it appeared. The two main explanations for this phenomenon would seem to be, on the one hand, the obviously higher per minute tariff rate of mobile communication and, on the other, the conditions involved in calling from a mobile, sometime constrictive and often less comfortable than from a fixed terminal (in the street, in a car, in a public place with noise from people and other individuals passing by, etc.) (Ibid., 40-41).

In a more general fashion, it would appear that, taking into account the differences between both types of telephony, far from being opposed, they both bear a quite marked relation of complementariness. On the one hand, the fixed telephone has forced its way in over the last few years as the collective communication instrument par excellence and generally occupies a central position in the common place in the family home. On the other, the mobile tends to become an increasingly more “personal” communication instrument the number of which is no longer associated with a family but to a particular member thereof. The relative annoyance of people close to a ringing mobile in the absence of its owner without knowing whether to answer the call or not can also be seen, which is proof of the heavy personalisation of the mobile.

The development of such a “personal” communication tool would seem to respond to certain requirements engendered by the slow but very profound changes in our society. For example, Heurtin evokes three factors present in the growing complexity of the organisation and in the form of family interactions: the emergence of single parent or recomposed families, particularly demanding of personalised telephone ties by reason of their broken structure; the "internal democratisation" of the family which accentuates the autonomy of individuals and is “liable to favour the spread of less collective and more personal telephony”; and, finally, the relative lengthening of sons’ and daughters’ cohabitation in the parental home, which generates a demand for individual communication devices allowing a certain amount of autonomy to be achieved with respect to parents (Ibid., 48). We think that other additional phenomena participate in the growth of the need for “personal” telephony for adolescents and young adults. Thus, the development of cohabitation between students and young graduates entering the labour market, who choose to share a home and expenses related thereto. In this case, individual communications are clearly more frequent than collective calls (i.e., earmarked to the overall cohabitants) and the mobile tends to replace fixed telephony. In this context, let us quote the increasingly higher number of young people who spend their holidays with members of their group of friends rather than with their family. Here, mobile telephones play a major bonding role (not to say an authentic “cord”) between the family and the young person away on holiday. There is an article in this respect which appeared in the middle of summer, 2001, in the pages of a Belgian Francophone newspaper stating that the sale of mobiles in that season, generally quiet as regards trade, experienced a peak of activity only comparable to what traditionally occurs during end-of-year festivities (Le Soir, 13 August, 2001).

It would appear, then, that a new form of telephony based on communication personalisation complementary to the classical fixed telephone which fundamentally favours family communications is developing with the spread of

the mobile amongst the Belgian population. But, as stated earlier, the differences between these two types of telephony are not restricted to the individual or collective aspect of calls. To begin with, who pays has become very important with the spread of mobiles. Young users are increasingly paying the costs themselves and not their families. In other words, they become their own telephone budget administrators and are taken gradually towards practices oriented towards alternating the roles of “payer” and “receiver” and, consequently, towards maintaining a balanced, acceptable relation for each of the items. This may explain the success of pre-paid cards enabling a passive presence to be maintained in the network, receiving calls without having to pay a monthly fee. The mobile telephone also constitutes a solution very much appreciated by young people for monitoring the cost of their communications. It in fact displays the advantage of technically limiting the length of messages to approximately 160 characters. It is impossible to exceed this technical limit in messages whilst a telephone call often easily lasts far beyond initial estimates because it does not have these limiting technical features. Another important success of messaging is having an identified tariff rate most of the time, whatever the telephone network to which the message is being sent. If the considerable price barriers operators raise for making subscribers to their network captive are taken into account, it is normal for young people to immediately adopt the use of messaging.

In addition, it is obvious that the identifying value of the telephone number has tended to become less important with the arrival and spread of the mobile. A person’s fixed telephone number was a reliable, stable, lasting piece of data, inscribed on the same level as his “physical” or spatial address. It needed a major event, such as moving to another town, for the telephone and spatial co-ordinates to change. Nowadays, mobile phone users, and particularly young people, change numbers much more easily, using operators’ advertising campaigns as an excuse. Some can thus change their mobile number to break their ties with the group, to escape from the tribe. Changing number becomes a clear sign demonstrating a break with the group, the will to be away from the others who continue in the network, a means of breaking loose. If this is related to frequent changes in e-mail addresses, breaking the relative stability of the home address, it may be deduced that new information and communication technologies participate to a certain extent in social discoordination, in the loss of identity and progressive disappearance of references. However, the mobile number could find a certain identifying value again in the future when portability, which allows operators to be changed whilst keeping the same number, becomes really
effective.

Finally, bearing in mind the general brevity of calls, the delocation of interlocutors and the sometimes difficult calling conditions, mobile telephony effectively responds to certain particular communication codes: new lines of communication spread ("where are you?", "can you hear me?", "where are you ringing me from?", "I can’t talk to you at this moment "...) and interlocutors tend to come straight to the point and talk directly of the subject of the call and are not concerned at seeing the other person putting a sharp end to the conversation giving as an excuse a “network problem”, arriving at a tunnel or an area without cover or a spent battery. Apart from the medium’s game playing aspect and attractive prices, the success of messaging may also be explained by the possibility of silent communication, of transmitting on an affective, intimate plane or even right in the middle of a public place, however unfriendly and unhospitable it may be (a café, a train, a station platform, some

sport's track or even a classroom). Only the SMS enables communication to be made without speaking and without disturbing the rules of good behaviour too much. Thus, whilst mobile telephony has contributed to the upswing in personal communications, it has also played a major role in the appearance of a new mode of communication based more on the transmission of information than decorum in conversations.

The Mobile as a personisable and personalised object

We have seen how the mobile, on the one hand, is the vector for numerous codes, values and images constituting the same amount of information on its owner's personality and, on the other, how it is the instrument par excellence for personal communications (contrary to the fixed telephone being rather more for family use). It is not surprising, therefore, to see how stunningly products and services earmarked to young people for modifying and personalising the appearance of their telephone have developed. From interchangeable casings with a variety of colours and designs to the pictograms and logos decorating the telephone's screen, including covers and sounds inspired on a hit song or on the signature tune of a television programme, without counting internet sites and trade magazines offering accessories which allow their mobiles to be given a "unique character and appearance" (extract from the Proximus company's promotional advertising).

These accessories are highly appreciated by adolescents and both operators and makers have realised the importance of this market. Whilst two years ago, models providing the possibilities of personalisation were rather the exception to the rule, most current telephones are surrounded by an immense paraphernalia of accessories. Others are available in an extensive range of colours and designs. Certain companies call in famous designers or internationally famed fashion designers to design the external look of their telephones. Mobile operators who do not propose the latest popular jingles or dozens of logos (paid for) to their young customers to be telecharged from their internet site are rare. Magazines specialising in the sale of mobile phones make the model's originality a sales argument like any other. In other words, everything is good for pushing adolescents towards increasing their expenditure by offering them the mobile "that no-one else has". Let us say that the "personal" side of the portable telephone (contrary to the "family" or "collective" aspect of the fixed telephone) has enormously contributed to the success of these accessories.

This is how the mobile phone is progressively turning into "one of the base elements of the year 2000's look " (Fortunati: 1998, 90) in the same way as a tee-shirt, trainers, a blouse or other technological objects today fully assimilated by everyone's fashion: wrist watches. By when will we have the annual autumn-winter or spring-summer collection of mobiles, like the revolution caused in the world of watches by the appearance of the Swatch in the mid 1980s? When that day arrives, it may be thought that mobile telephony will have totally abandoned the world of technology to join the world of fashion accessories.

The Mobile as an object of leisure and entertainment

The world of fashion, however, is not the only one interested in mobile telephony. The world of leisure and entertainment is also increasingly interested in mobile users. For some time now, terminals have included one or several copies of the first pocket

video-games dating from the 1980s. Time can therefore be “whiled away” thanks to the mobile phone, but this function would seem to be open to development in the near future. The games available will evolve parallel to phones to become more and more sophisticated, but, in particular, it will be network games that will foreseeably undergo major changes in the coming years. Moreover, companies active in this constantly evolving sector are increasingly more numerous in proposing this kind of entertainment, often based on SMS technology and, therefore, to be paid for. Treasure hunts, crosswords of all types and other letter games to exercise the memory or thinking have thus been multiplying for months and mainly attract young users, as may be intuitively imagined. Having grown up with game consoles and portable video-games, they are accustomed to intuitively manipulating buttons and to undertaking action on a small screen.

Whilst the mobile is undeniably tending to become an object of entertainment, it is also interesting to emphasise the relative failure of the WAP, the communication protocol that theoretically allows slightly adapted web pages to be consulted from the mobile telephone. The most frequent reasons put forward to explain this relative failure are, on the one hand, high communications tariff rates and, on the other, the slowness and lack of a certain friendliness in surfing from a mobile phone. Therefore, if it was correct to consider the GSM as an identifying, symbolic object as well as a communication and entertainment tool, its future as being an information object would seem more random and widespread. But things can evolve very swiftly, especially with the arrival of new internet technologies for the mobile phone, such as GPRS and UMTS.

The Mobile as an object of communication

The numerous identifying aspects of the mobile and the multiple social values it entails should not let us forget that it was originally a communication tool. As the survey mentioned in the first part of the article shows, most girls and boys between 12 and 18 years of age, when asked in the context of a study carried out in September, 2001, stated “being accessible” as the main reason for mobile use. We believe there are two sociological phenomena behind this reasoning which are worth demonstrating.

The first has to do with the young person’s social existence in his/her group of friends. To socially exist in this network, it is necessary, above all, to be together, be called. Calls received are not attributed a functional value ("I communicate a lot ") but, above all, a symbolic or existential value ("I receive calls, therefore I exist"). On this same level, the mobile embodies or personifies a major financial response to the difficulty of existing in the network. Moreover, like in the case of voice calls, the number of messages received constitutes an interesting barometer of the adolescent’s social importance.

The second sociological phenomenon is linked to the evolution of family ties. As Heurtin notes, "family structures and modes of habitat tend [...] to evolve today, and these evolutions are liable to be oriented towards a sense of the development of the residential mobile phone " (Heurtin: 1998, 10). The home acted beforehand as a spatial and social framework for parents-children communication. Nowadays, this framework is emerging as increasingly empty of social links by virtue of certain evolutions such as the woman’s working, the transformation of family structures in increasingly more single parent or recomposed families and the lengthening of the duration of parents-children cohabitation. This all contributes towards making the mobile a "union" increasingly

present in relations between adults and adolescents. Since the “here together” no longer exists, the tendency is to recompose the family in a “somewhere else”, where the other may be together even it not there. Thus, for certain young people, the mobile phone sometimes represents a tie constituting the link between them and their parents, making the duration of the tie an object of constant negotiation: mobile on or off, voice messaging activated, etc.

In a more general way, the introduction of the mobile phone into homes raises different reflections. Some generations ago now, the fixed telephone had been progressively shaking off its exclusively utilitarian character to become a leisure tool, at the same time as the television and sport, a means to while away the time and fill the vacuum left both by family and associative structures. Martin and de Singly have shown how half the boys and more than two thirds of girls make an habitual, expressive use of the fixed telephone (2000, 115). "Expressive use" must be understood, according to the theoretical distinction as manifested by Parsons and Bales, as comments on family life, on class, on relations with peers, etc. This use is the opposite to "instrumental" use, which is less serious, a phone call to make an appointment, organise a trip out, discuss homework or comment on a match or a film (Martin & de Singly: 2000, 114). It can thus be clearly seen that the fixed telephone was often used by adolescents at home at night to prolong relations woven during the day at school or in a group of friends. It would appear that the mobile pursues, i.e., amplifies this phenomenon, especially through written messages to revert on important events of the day, confide in someone or send sweet words.

We have also seen earlier that if the fixed telephone is a community communication tool in the family structure, mobiles are characterised by their personal, i.e., private, and, in certain cases, intimate use. Using this individualisation of communication, young people re-find a certain amount of autonomy, new independence, a discreet refuge in their relations, in the shelter of parental control. Indeed, whilst the detailed fixed telephone bill regularly arrives in the head of the family’s hands, listing all numbers called during the course of a month or months, young mobile users move amongst pre-paid cards. It is thus difficult for parents to rake through the records of their children’s calls. In addition, whilst fixed telephone directories multiply and are improved, where a name can be found from a number, there is still no mobile phone directory. It is therefore practically impossible to relate a number with a specific person. Finally, if the fixed telephone is frequently located in a collective area of the home (drawing room, dining room, kitchen, etc.) and, consequently, conversations are exposed to the indiscreet ears of the rest of the family, the mobile is carried by definition to the bedroom or spots most hidden away in the home. Let us add the immense success of written messages which, associated to a vibrator fitted terminal, makes silent communication possible and we then have features of mobiles that guarantee authentic independence and real discretion in communications, allowing the adolescent to phone whoever he/she wants, whenever he/she wants and wherever he/she wants in the most absolute privacy. Moreover, it is no accident that, according to a survey sponsored by a mobile maker, one Belgian user out of every two under 55 years of age considers their mobile as “important for running their active life” (Le Soir, 18 October, 2001). At the same time, numbers of mobile phones are increasingly seen in short appointment announcements that can be found both in magazines especially addressing young people and in the less specialised.

Language and messaging: "Kwa, kestu di?"

To finish off this article, we would like to address another phenomenon of society to which written messaging invites us, viz., the evolution of language. Using the SMS, in fact a new area of communication is opened where it is no longer necessary to speak to be understood. In addition, bearing in mind this service's technical limitations (a maximum of 160 characters), its price (between approximately 0.12 Euros and 0.15 Euros per message, depending on the operator) and the relative difficulty in coding the message, the most varied abbreviations, symbols and *smileys* are used to economise on time and space to such an extent that it becomes almost a new language based on more or less secret codes, developed within each "tribe" of users. A mixture of languages, symbols, phonetics and acronyms more or less difficult to decipher for the uninitiated. This "SMS language" draws the curiosity of linguists and sociologists. Various SMS dictionaries have become available in bookshops. Let us look at a few examples of abbreviations and *smileys* (partially taken from the book entitled *La cyber langue française*, by Aurélia Dejond, which will appear in Spring 2002, editions La Renaissance du Livre).

We can distinguish two large types of codes in this new SMS language: on the one hand, the famous *smileys* already very widespread in electronic mail messages, formed by punctuation signs and representing the interlocutor's emotions. And, on the other, abbreviations and acronyms which ignore syntax and spelling and endeavour to say a maximum of things in a minimum of time and space.

Smileys became popular some years ago now in parallel fashion to the spread of the internet and e-mail. They symbolise the face of a character and to read them, it is best to slope the head leftwards: ":-)" represents a smile, ";-)" a wink, ":-(" sadness.

Other *smileys* are less famous: "-o" indicates surprise, ":º-(" crying, and ":-/" doubt. Others give another type of information. "#-)" and "%-)" mean, for example, that the interlocutor has been partying and has worked all night. Finally, others physically describe characters: "~:@" indicates a baby, "8-)" is applied to an individual wearing glasses, "(:-)" a bald person, and "{:-)" any hair style with a part down the middle. These smileys are, however, universal and, as from their creation, known to most users, and it would not seem of any use to go further into the matter.

Abbreviations, on the other hand, would seem to be clearly more original and, in any event mostly

BRIEF DICTIONARY OF "G-NERATION" USAGE

Some ways of greeting		
« BJR »	bonjour	Good morning
« BSR »	bonsoir	Good afternoon/evening
« lo »	hello	Hello
« @2M1 », « A2M1 »	à demain	Till tomorrow
« RV 2M1 »	rendez-vous demain	See you tomorrow
« J'V te LéC »	je vais te laisser	I'll be leaving you
« BCNUL8TR »	be seeing you later (« on se voit plus tard »)	See you later
« CU », « CYA »	see you, see ya (« à bientôt », « à la prochaine »)	See you later
« CUL8TR »	see you later (« on se voit plus tard »)	See you later
« CU 2nite »	see you tonight (« à ce soir », « on se voit ce soir »)	See you tonight
« B4N »	bye for now (« c'est tout pour le moment »)	All for now
« IG2Go »	i've got to go (« je dois y aller »)	I've got to go

Frequent questions		
« CB? »	ça baigne ?, ça va bien ?	Everything OK?
« TV1? », « Ske tu vi1? »	tu viens ?, est-ce que tu viens ?	Are you coming?
« TVB? »	tu vas bien ?	Are you OK?
« 2VaB1? »	tout va bien ?	Everything OK?
« T pa f'Hé? »	tu n'es pas faché(e) ?	You're not angry?
« CT B1 IR? »	c'était bien hier ?	How did yesterday go?
« Sa t'1 TRS? »	ça t'intéresse ?	Are you interested?
« Put1 kestu fou? »	putain, qu'est-ce que tu fous?, mais que fais-tu ?	What are you doing, you old bastard?

belong to the French language. Some are used for greeting or bidding farewell to their interlocutor ("A+" for "à plus" or "à plus tard" – bye for now, see you later -), "SLT" for "salut" -health-, "A12C4", "à un de ces quatre (to one of those four). Others replace questions and expressions normal to daily life: "quand?" (when?) will never be used but "ken?", nor "qui?" (who?) but "ki?", nor "quoi?" (what?) but "kwa" or "koi". Also, "keske c?" replaces "qu'est-ce que c'est" (what is it?), "kestu di?" means "qu'est-ce que tu dis?" (what are you saying?), and "kestu X?", "qu'est-ce que tu crois?" (what do you think?). Let us say also that "Je X ke" is used for "Je crois que" (I think that), "G+1 tune" means "Je n'ai plus une thune" (I haven't a farthing) and "G la N" is translated by "j'ai la haine" (I hate it). The following table takes other examples of SMS abbreviations frequently used by young people in Francophone Belgium.

Some expressions in day-to-day living		
« AMA »	à mon avis	In my opinion
« AMHA »	à mon humble avis	In my humble opinion
« AMHAAMQJA »	à mon humble avis à moi que j'ai	As I humbly understand it
« BTW »	by the way (« au fait », « à ce sujet »)	By the way
« GCRé 2 PaC »	j'essaierai de passer	I would try and go
« Gcout 1 CD »	j'écoute un CD	I am listening to a CD
« G 2 manD »	j'ai demandé	I asked
« l'R 2 Ri1 »	l'air de rien	Nothing
« G l'R 2 Ri1 »	j'ai l'air de rien	Blank
« ChanJ 2 suG »	change de sujet	Change of subject
« Je mank d'NRJ »	je manque d'énergie, je suis fatigué	I'm exhausted
« J'le saV »	je le savais	I knew it
« J'V RST »	je vais rester	I'm staying
« J X pa »	je n'y crois pas	I don't believe it
« G 1 Kdo »	j'ai un cadeau	I have a present
« GU 1 Kdo »	j'ai eu un cadeau	I had a present
« Ls tomB »	laisse tomber	Drop
« D100! »	descends !	Go down!
« RapL mwa 6 sa t'1 TRS »	rappelle moi si ça t'intéresse	Remind me if you are interested
« Ta K paC »	tu n'as qu'à passer	You only have to come by
« No strS »	no stress, pas de stress, du calme	Take it easy
« GT entr1 2 penC a twa »	j'étais en train de penser à toi	I was thinking of you
« T la + BL »	tu es la plus belle	You're the best looking

CONCLUSIONS

In this analysis of the appropriation and use of the mobile telephone by young Belgians, we think attention should be drawn to certain important confirmations. Firstly, it is interesting to see to what extent the mobile would appear as an "intimate" technical object. This intimacy may in some cases even lead to engendering an authentic affectionate investment by the adolescent who decorates his terminal, adorns it and personalises it with the aid of a multitude of accessories available nowadays on the market to make it truly *his/her* mobile phone. Intimacy is also seen in the sometimes well tightened tie between the mobile phone and the body. A prolongation of the ear and the voice, the mobile also recalls the user's touch when sending a written message, handling the keypad to surf the menu or receive a call in silence thanks to the vibrator. It becomes even more discreet when integrating into clothes or being provided with an audiophone and micro to speak almost naturally with the interlocutor. Intimacy, finally, in the opposite sense to that of the fixed telephone which is the communication tool of a family or a home. The mobile is in most cases the personal instrument of an individual from which private communications are exchanged.

A second confirmation emerging from our analysis is the paradoxical side of a technology which, thanks to the SMS, enables communication to be almost instantly made without speaking and without the need of a heavy, costly terminal, but which is a vehicle with a large number of words without a true message, without any social communication. Communicating without talking, or talking without communicating, such is what the mobile telephone's daily reality seems to be.

This paradox at least explains in parallel fashion the third great confirmation from our analysis: the

phenomenal success of the SMS amongst young people. Parallel with explanations demonstrating the game playing aspect of these very attractive messages for the "*Game Boy* generation", it may in fact be thought that through numerous SMS sent both day and night, young people are seeking to fill the deficit of social and affective ties. Because firstly, behind this useand above all, there is a search for social existence in a world that young people see as increasingly less "communicative". Thus, close to half of the adolescents declare themselves desirous of receiving advertising messages. So many signs that do not deceive with regard to the need for communication which is today choking certain young people. This is why the most obvious sign of an "incommunication" society amongst young people may possibly be seen in the degree of power as held by the mobile and its written messaging.

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YOUTH AND MOBILES: THE BRITISH CASE AND FURTHER QUESTIONS

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This article examines youth and mobile telephones in the UK. To provide some context it first examines

- *The history of the mobile telephony market and current levels of usage*
- *Official statistics on the current adoption of mobile phones by young people*
- *British media coverage of youth and mobiles and a specific journal aimed at the youth market.*

Turning to empirical studies, the article goes on to report on

- *Quantitative data on youth and mobiles based on an on-going BTexact Technologies[1] -funded longitudinal household panel study*
- *Qualitative studies of youth and mobiles*
- *The particular issue of the mobiles and the gift-relationship*

Finally, the article considers further areas of research that might be developed and some of the issues involved, covering.

- *Variation amongst youth within nations*
- *Approaches to understanding national differences*
- *The domestication[2] of the mobile phone collectively by youth*
- *Ideas para entender las diferencias nacionales*
- *Some of the consequences of generations of current youth growing older and new generations of youth appearing.*

Key words: Mobile phone, GSM, SMS, text messagerie, information and communication technologies (ICT), information society, youth, socialization, communication, primary group.

Contexts

Mobile Telephony in the UK

A recent study for EURESCOM[3] showed that compared to many other European countries the UK was not among the leaders in terms of market penetration (these were the Scandinavian countries, Italy and the Netherlands) but Britain was in the next grouping, alongside countries like Germany and France (Mante-Meijer and Haddon, 2001).

That research also showed that looking at the overall history of European markets, this situation arose not because the UK was late to develop the technology: the first analogue system was relatively old and the UK were fairly early to adopt GSM compared to some other countries. So although the mobile phone is considered a 'successful' product and remarked upon in the British media, the interest and take up has not been so strong as in the lead countries.

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1. www.btexact.com
2. "Domestication" is a word coined by the author and others (Roger Silverstone, for instance) to indicate the process whereby technologies become "domestic" or they are adopted and used easily in the household.
3. EURESCOM is an institution funded by most of the main European telephone operators to carry out research and studies of common interest. Its headquarters are in Heidelberg, Germany (Editor's note).

In the latest survey by the UK telecoms regulator (covering the population aged15 years old or more) conducted in August 2001, 73% of people claimed to personally own or use a mobile phone and this is rising at a rate of about 3% a quarter at this moment in time (Oftel, 2001). MORI, the bureau who carried out the survey, have collected data going back to January 99 – when the figure stood at 27%. We can therefore appreciate the magnitude of the increase over the last two years, which contained some periods when the figures leapt up more dramatically (e.g. January 2000, presumably because of people getting mobiles as Christmas presents, and August 2000). Given that an additional 6% of people say that there is a mobile in their home that they do not use, Oftel concludes that 79% of UK homes have this technology. Over three quarters of mobile owners (77%) use pre-payment cards rather than taking out a subscription - as in other countries, the arrival of this payment option boosted the market.

Youth and Mobile Phones: Official Statistics

In the UK the term 'youth' is almost interchangeable with *teenager*, i.e. below 20, even if 18 is the main turning point when people's legal status changes to that of adult. Once into their 20s, people are more likely to be considered as (young) adults.

Among most national surveys of the population which look at technologies such as the mobile phone the youngest people in these samples tend to be aged 15 or 16 years old and so data are not available on the younger 'youth'. In addition, the numbers involved are often too small to just consider the 15-19 year old category. Hence the age group used by Oftel is 15-24 years old. In other words, we simply do not have official data that specifically match what people would call 'youth'.

However, if we use 15-24 year olds as a proxy, this is one of age groups among whom the mobile is most popular (88% have a mobile). To put that figure in perspective, 87% of 25-34 year olds and 88% of 35-44 year olds also have mobiles. Hence, the technology is not so outstandingly concentrated in that younger group. Nowadays mobile phone technology has spread more broadly among the population (and recently more of the 55+ group has adopted mobiles, as in many other European countries (Mante-Meijer and Haddon, 2001).

Media, youth and mobiles

There has been some TV coverage of youth and mobiles, mainly as news items, although in general this technology does not receive any where near as much attention as the Internet. The first type of report was focused on the adoption figures, and emphasised a new phenomenon was happening: this generation of youth had a different technology compared to youth of the past, or to put it another way, a different experience from when current adults were young. A second, and later, type of media coverage dealt with concerns about health issues, what the long term (radiation) effects of using mobiles might be. This has been a theme that has been raised more generally, but the potential danger for younger users was also singled out. A third form of coverage has looked at bullying using SMS messages, but that is in a context where bullying in general amongst children has developed a higher profile as an issue in recent years. Specifically as regards SMS, one *World Service* programme decided it was newsworthy to ask about the implications for language and literacy of youth using this new style of language.

The other media development is a magazine specifically aimed at young people with mobiles

(*Mobile M8*) - reflecting the fact that the size of the population of the UK is large enough to support such specialised media. Hence, we have a journal that is helping to support (or determine) what is fashionable or 'cool' in relation to mobiles, what are the latest brands, who (e.g. in terms of celebrities) is using what, while evaluating the ringing tones, the logos, the phone covers, etc. and explaining the language of texting and emoticons such as '*smilies*'.

EMPIRICAL STUDIES

Quantitative studies

BTExact Technologies has several questions on mobile telephony in its current longitudinal study. The panel was first interviewed at the end of 1998 (referred to as the first wave), a second interview (the second wave) took place at the start of 2000 and a third in 2001 (see Anderson & Tracey, 2001)[4]. The results from these questions can provide more details compared to the official statistics, especially casting some insight on younger teens and demonstrating processes of change.

The over-16 year olds were themselves interviewed. Looking only at the 16-19 year olds (inclusive) 18% had mobiles when first interviewed[5]. By the time of the second wave this had risen to 75% in 2000 (and we can anticipate that the figure will be even higher in the third wave). Hence this was the time period where we can identify clearly dramatic change in terms of adoption by youth. In that second wave, 63% of those with a mobile phone had pre-payment cards so this means of payment was dominant - although some youth did clearly have subscriptions.

When asked the most important reason why they had acquired a mobile half cited 'safety'. In the light of the qualitative research discussed below there are questions about how to interpret this figure. Those qualitative findings show that while youth sometimes accept parents concerns over being in public spaces, there is also an element of using parental concern about the safety of their children to justify young people gaining access to a mobile phone. Both of these aspects can inform the answer to this question. Over a quarter of the youth with access to mobiles in wave 2 of the *BTexact* survey (28%) said that the most important reason for having one was that it made it easier to talk to a friend – which would fit in more with the qualitative findings about the importance of patterns of sociability amongst peers at this age

If we look at their answers about usage, very few 16-19 year olds used the phone just for emergencies – they usually said that they made a least some calls per week. So even if 'safety' figured in the motive or justification for adoption, it would seem that the phone was subsequently used for other purposes[6]. That said, there is one figure that goes against any stereotype of youth using their mobiles all the time: a quarter claimed to make only 1-5 calls per week. Admittedly, nearly three-quarters (43%) said they made over 16 per week, but the general implication is that there is some variation in usage amongst youth.

In some of the qualitative studies (not just in the UK) we find examples of young people preferring to use the mobile rather than the fixed phone because it provided a sense of privacy, because these

[4] As part of the process of refining the survey , some questions appeared in wave one which did not appear in wave two and vice versa.
[5] Meaning that the number was so small that it was no longer worth continuing with more detailed statistical analysis.

[6] Of course, one possibility is that youth make periodic calls to parents to assure the latter of their safety – but that would not fit with the main gist of the qualitative studies.

young people could escape the monitoring of parents. But actually, the *BTexact* data show that when asked if using the mobile phone had replaced using the traditional phone the majority (60%) claimed that it had made hardly any impact. While, over a quarter (27%) said that the mobile had somewhat replaced the fixed line for them, and a small minority said that it had completely replaced using the home phone, this implies that while there is some displacement of one communication medium by another it might be more limited than suggested by the examples in qualitative studies.

Turning finally to the younger teens, the *BTexact* survey asked parents questions about the children in the home who were under 16 years. In parallel to the older teens, in the first wave 6% of this age group had mobiles and by the time of the second wave in 2000 this had risen to 24%. So an increase by fourfold is just a little higher than for older teens, but starting from a much lower baseline in 1998. Clearly only a minority of the younger group had phones, but, judging from the experience of other countries such as those in Scandinavia, we might expect this to grow (Ling and Helmersen, 2000; Rautianinen, and Kasesniemi, 2000).

In the first wave of the *BTexact* survey, parents were asked 'from your point of view which were the reasons for them (children under 16) getting a mobile phone[7]?' While 70% mentioned emergencies, a majority mentioned that it was because of their children's need or desire to be in touch with their friends (58%). This is interesting for a number of reasons.

First, while safety was clearly very important it was not the single one and only overriding consideration even amongst parents of younger teens. This is important because other research has emphasised the degree to which parents have concerns about public space in Britain – e.g. the vast majority of children are now driven to school because of this fear and we have seen the emergence of what has been called a 'bedroom culture' partly because of parents' desire keep children in safe places where they can be monitored (including other people's homes) (Borvill and Livingstone, 2001).

Second, given that qualitative studies suggest that that some parents are involved in acquiring the mobiles, or at a minimum allowing their children to get them, it would appear that many parents also appreciate and maybe willing to support their children's sociability.

Third, studies of the traditional phone have noted some tension, and even conflict, between parents and children over phone use. This can be found in British and French qualitative studies, (Haddon, 1994; Martin and de Singly, 2000) and in quantitative studies (Haddon, 1998). For example, nearly two-thirds (65%) of British 14-17 year olds received complaints about the cost of the phone calls they made[8]. Now in answer to the above BTexact questions there were some optional answers that could have connected with these and other tensions over the phone. One optional answer as to why children had acquired a mobile was that 'it stops them using the phone at home' (which may imply that it stops them blocking the phone, i.e. stops incoming calls and stops other people using it - which was the another complaint in the earlier study). Yet another optional answer was they acquired the mobile because 'they nagged a lot'. In fact, only a minority of parents mentioned either of these

[7] Since the numbers involved for the under-16s was greater than for the 16-19 year olds we could continue with a little more detailed analysis.

[8] Which was higher than in other countries involved in this 5-country survey: the figure was 42% in France and Spain, 49% in Italy 49% and 53% in 53% in Germany.

'negative' rationales for acquisition (15% and 19% respectively).

Finally, there was a question asking who paid the costs of mobile telephony. Other qualitative studies have noted how getting children to pay is not only a way of resolving tensions over phone costs but also it is step towards encouraging children to be independent and make their own choices about finance (Ling and Helmersen, 2000). In both the first and second wave, 41% of the children paid the whole bill and just over a third paid some of the bill (34%). Hence, even for younger teens, that financial independence is becoming important, and this has not changed with the expansion of this market for younger users.

Qualitative studies

The qualitative studies that have been conducted paint a picture that is not so dissimilar from the findings of studies in other European countries. For example, parents monitor mobile usage and costs. Teenagers sometimes allow parents to monitor their whereabouts in order to gain possession of a mobile phone in first place. Indeed, sometimes they accept parental concerns about their safety in public spaces as being legitimate (Green, 2001). . On the other hand, youth can gain some privacy by using the mobile, sometimes talking to friends even in the home rather than using the fixed phone line. So in certain senses they collaborate with parental monitoring while in others they resist it, sometimes developing 'parent management strategies' such as excuses like 'the battery ran out' when they make themselves uncontactable by their parents (Green, 2001).

Although the example above shows how the mobile can be viewed as a 'digital leash' (Ling, 1997), qualitative research in part taking the parents' perspective argues how allowing their children to have mobiles can also be a means by which parents can help their children to establish independence. It allows young people a discrete space, even if an electronic one, and allows parents and children, for example, to check in with each other when youth are exploring new spaces (Nafus and Tracey, forthcoming). In this sense, while the mobile may be may be a new technology it is used within the more traditional process of allowing youth to develop as persons.

Apart from relations with parents discussed above, and relations with peers discussed below, it is worth adding that there are also institutional constraints on youth's use of the mobile - for example mobiles are banned in some schools[9] and confiscated if found not just because of the ringing in class but also because they might be stolen (Green, 2001). Of course, in practice youth sometimes resist these controls as well, for example, by making calls on their mobiles in the 'private' spaces within schools (one girl informant in this study reported that when she went into they toilets she found a whole group of girls talking on the phone).

Amongst peers, communication by mobile phone are used to monitor the 'highly dynamic shifts in peer relationships' since it is important to know peers' location, to know what they doing, and to know who they are with (Green, 2001). Peers also shape fashion and influence usage as they look at each others brands and check the operators they have joined, consider the aesthetics of other people's mobiles and how they use them (e.g. names in the phone book). These were all ways of demonstrating 'street cred'[10] (Taylor and Harper, 2001a).

[9] Here one might expect to find some national differences - the researcher in this study notes that other banned objects in some British schools include leather jackets, trainers and walkmans.
[10] Street credibility.

Other studies indicate that over and above considering 'usage, both mobile phones as consumer goods and text messages can be topics of conversation in their own right as young people comment on the look of phone or the 'cuteness' of a message they recently received. Some youth have claimed that gossip has been enhanced through texting. And sometimes when they did not receive messages young people felt excluded and rejected – that something was wrong (these examples are all from Taylor and Harper, 2001b).

As in other countries, it has been noted that nature of text messaging not only helps to consolidate peer relationship amongst youth, but also helps to differentiate them from adults (Talyor and Harper, 2001a). However, even amongst youth there are also various rules about SMS, or maybe it is better to say perceptions of some youth about what is the right and wrong way to go about things. For example, take language. Even though texting often does not use standard English , there are examples of some youth objecting to the overuse of capital letters or the lack of any punctuation that can make messages difficult to read . And then there are understandings about when it is inappropriate to use texting as opposed to using other means of communication, including face-to-face : for example, how it is not right to end a relationship, to 'dump' someone, through sending a text message (Taylor and Harper, 2001b).

More practically, in accordance with the micro-coordination role as noted in Norwegian studies (Ling and Yttri, forthcoming), SMS is used to adjust arrangements already made as well as arrange for times to chat (Eldridge and Grinter, 2001).

[11] Partly because it is a code, partly to fit in with the constraints of how many characters can fit in a message.
[12] The abbreviations and shorthands could also make it difficult to understand the intent of messages, especially if humour or sarcasm was involved (Eldridge and Grinter, 2001).

The gift-relation and mobile phones

A number of European studies have commented on the role of mobile and SMS messages in terms of the 'gift' relationship between youth (e.g. in the UK, Nafus and Tracey, forthcoming; in Norway, Johnsen, 2001). Derived from an anthropological tradition, this sees gift-giving, gift-receiving and reciprocating as an activity for cementing the social relationships between people. This section provides a number of examples of this, which would probably be familiar in other countries, from a British qualitative study. The study looked at how youth rituals of exchange - both as regards the mobile phone as an object and SMS - can provide a way of 'demonstrating and testing out the trust that exists in their relationships' (Taylor and Harper, 2001b).

Looking first at the mobile phone itself, the very act of leaving it around on the table so that friends can pick it up and explore its features can represent an expression of trust in others. Then there is the practice of allowing others to use one's phone to make calls. This can happen if the credit on one person's prepayment card is used up, in which case he or she can he borrow the phone from other peers. The way in which mobile network charges are organised means that it is sometimes cheaper to use a friend's mobile because they are on the same network as the person being called. In fact, sometimes youth talk of feeling obliged to make their phone available to friends, otherwise they would be thought less of. Later, the person borrowing the phone is obliged to reciprocate either in kind or by another means (buying credit for the friend's phone, buying a meal).

If we turn to actual messages, we have the practice of one person receiving a message and sharing it with a friend, to reinforce that friendship – showing it to them or sending it on to the other

person's mobile. This can happen even when the people concerned are talking to each other at the same table, as they go through the ritual of saying when they are sending or have received that message. Of course not all messages are shared and not all messages are shared with everyone. Some are so transitory that they lose their meaning quickly, when seen out of context. Some are too personal or risky to show others (although sharing personal messages can create added intimacy). But some are capable of being made more 'public', like jokes.

The youth in this study also talked about the obligation to reciprocate – when they sent messages sent they expected an answer, often straight away (in contrast to the argument that because text involves asynchronic messaging people can answer when it suits them). So we have example of people phoning up and ask 'what's wrong' when they did not get a reply to their text message, asking why they were being ignored. As the researchers put it the recipient of the message was 'obliged to meet the challenge of the donor' (including when messages arrived in the early hours of the morning when they were asleep in some of the examples given!).

In general, this research notes how gifts can be a means of organising memories, they 'make feelings concrete' and hence they become important to the receiver. In the case of SMS we can see this in examples of youth wanting to keep many of the messages that were salient to them and complaining that the mobile phone's memory was sometimes insufficient. They could transfer them, but in doing so they lost something, what people have said in its original form as it arrived on the mobile. The researchers note how messages can bear the hallmark of a crafted gift, with a history attached to them.

But some messaging is also a 'duty'. Over and above reciprocating to messages received, some message gifts are expected. For example, one boyfriend talked of feeling obliged to text his girlfriend 'goodnight' when going to bed and 'good morning' when waking up, almost as a ceremony because it showed commitment in the relationship. His peers could empathise when he pointed out the negative consequences - i.e. his girlfriend would not be at all happy - if he failed to follow this ritual.

Lastly, which the processes of gift-giving can enhance solidarity they can also create rivalry and differences in status between the participants – for example, if peers do not reciprocate or do not reciprocate enough and they are perceived as being indebted. For example, replying over the Internet to a text message (e.g. using free on-line facilities to send a message to a mobile) can be considered 'cheap' response compared to paying to send that message from mobile to mobile.

FURTHER QUESTIONS

Differentiating youth

Before considering questions about national differences in youth's experience of mobile phones we might consider the variation within countries - otherwise we run the risk of stereotyping in general terms like 'teenagers do x' or national ones like 'British teenagers do x'. To provide a historical context, back in 1970s in British sociology there was a discussion as to whether a new 'youth culture' now existed reflecting a newfound affluence and new orientations amongst youth - but even at that time differences amongst youth were always to be found.

[13] For the general population, the official Oftel data shows differences by class and employment status, for example.

Certainly we might check for differences in terms of standard-social demographics (gender, class[12], race, income, education, employment status, etc). In terms of access, in general gender appears to be declining in importance, and certainly in the BT sample there was not statistical difference amongst teenage boys and girls. But some qualitative studies are suggesting that we consider other dimensions such as usage patterns and styles of use (Ling, 1998). Obviously age is a factor, given some of the differences noted in the BT data between 16-19 year olds and those who are younger.

In addition, we might also need to consider other differences in circumstances that lead to a different experience of ICTs such as mobile telephony. For example, in one French study of youth and fixed phone use, variation in young peoples' sociability with their peers, their closeness to their families and the degree to which they were trying to be independent of those families, and the degree of parental monitoring and control all served to produce different patterns of phone use. (Martin and de Singly, 2000). We might expect to find that some of these same variables also have a bearing upon mobile phone use (and we already saw earlier in the BT data that there was some variation in the number of calls made).

National differences

After acknowledging national variation, one next step on the road to understanding any differences between the experience of mobile telephony in different countries would be to ask whether there was anything in the wider national social contexts that might be relevant.

Hence, the reason for earlier observations about the British media context in this article. For example, if magazines specifically directed at youth with mobiles exist in some countries and not in other, does this in itself help to consolidate some of the practices around phone use and as well as influencing issues of taste and what is fashionable? To take another media example, in recent years cases of children been abducted and killed have had a high visibility in British media. This has probably contributed to some of the fears noted in the earlier discussion of '*bedroom culture*' as parents prefer to keep their children out of public spaces. But maybe that publicity has also contributed to the level of concern specifically about 'safety' that has been one justification for youth acquiring mobiles.

The economic dimension is another consideration. Anecdotally, when one of the authors was recently in Netherlands, several new operators were entering the market offering better deals than in the UK to gain market share quickly. The cheaper costs of mobile telephony at that moment in time may have helped the expansion of the market in general and, as part of that, the spread amongst youth.

One Norwegian study recently commented on debates about the minimum age for having access to a mobile phone (Ling and Helmersen, 2000). After spreading amongst the teenage population, the new phenomenon in the late 1990s was mobile acquisition by pre-teens. This created some unease, as shown by parents interviewed about the issue of the age at which it was appropriate to have a mobile. In fact, even some contemporary teenagers were commenting that nowadays children were receiving mobile phones when they were too young, given that they themselves had only acquired a mobile when they were first in teens. This raises another possible factor shaping national variation – if differences emerge in the different national contexts concerning perceptions of the correct age to be allowed access to certain ICTs, like the mobile phone.

In other words, before looking for 'cultural differences' in the sense that young people in different nations are somehow different, there are a number of things to check concerning the contexts in which youth operate.

Youth collectively domesticating the mobile phone

Traditionally the framework of 'domestication' has focussed mainly upon at the relationship between household members in order to understand the processes by which technologies find a place in the home, in the routines of daily life and gain symbolic meaning (Silverstone et al, 1992; Silverstone and Haddon, 1996). Early British studies on domestication tended to focus on the processes at work specifically in the home, while acknowledging the existence of the rest of social life. But it was always clear that homes and households are only part of the equation.

So in this context we might ask how mobile phones were 'domesticated' in social networks of young people. For example, what were the processes by which ICTs acquired meaning within such groups (over and above the marketing by firms)? What factors, for example, led (and currently lead) mobiles or particular brands of mobile phone to become fashionable (or not), what forms of negotiation have taken place and continue to take place within social networks and how have collective practices emerged? Are there rules about use and if so how are the policed? What type of subsequent career do mobiles have within a group context? So in general, this line of approach would want to investigate how consumption is shaped by the collective network.

Generational change

Finally, if we consider the current youth being studied in some of the research cited above, mobile telephony took on a role for them partly because it arrived at a particular stage in their life course – they were the first youth generation to acquire and experiment with this novel technology. This raises the question of whether the mobile will have particular meanings for them in later life. And what happens to the use of the mobile by this current cohort or generation of youth as its members grow older and some of the factors relating to their particular status as adolescents no longer apply? As their circumstances change, what elements of their practices do they keep and what ones alter (e.g. thinking about SMS and gift calls, for example)?

Furthermore, what will be the differences in the consumption of future generations of youth when voice mobile telephony and SMS have the status of being more established? In other words, what difference does it make to grow up with a technology (just as generations grew up with television as taken-for-granted as opposed to the generations who experienced its first arrival)? But of course, part of that answer will be complicated by the fact that the mobile, including its technology, functionality and symbolism, is itself evolving.

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MINI-MESSAGING IN EVERYDAY INTERACTIONS: A DUAL STRATEGY FOR EXTERIORISING AND HIDING PRIVACY TO MAINTAIN SOCIAL CONTACTS

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Since the passion of the first adepts two years ago, mini-messaging has absolutely entered the scene as a communication practice and redefines mobile linked interpersonal interaction in the sense of an expression of emotions at once more excessive but less ostentatious. In fact, the mini-message providing the possibility of exchanging written texts limited to 160 characters over mobile phones borrows its value for use at once from traditional and innovating modes of communication carried by the voice and in writing (mobile telephone, e-mail, hand-written letter) without being limited to any of them. In creating conditions for communication as rapid and instantaneous as e-mail transmission, as immediate and easy to receive and send as the mobile phone and with the efficiency, concision and discretion of writing in comparison with long conversations, the mini-message has found an original position for everyday interactions in all kinds of places and circumstances[1].

Key words: Mobile telephone, GSM, SMS, Text messaging, information and communication technologies (ICT), information society, youth, socialisation, communication, primary group.

Methodology

The results presented here are obtained from two qualitative surveys carried out in July, 2000 and July 2001. Personal interviews of approximately one hour were held for each period involving about forty people who used mini-messages in the Paris region.

Although it would appear difficult to draw reliable statistical conclusions from such a low sample, comparing the structure of the two groups shows a current tendency towards diversification in users' age towards younger people (under 18 years of age) and towards adults over 35. This trend coherently follows the increase in the number of users in overall mobile owners.

In the year 2000, users were concentrated above all in the 18 to 24 year old age bracket, then in the 25 to 30. They were equally distributed in 2001 between 16 and 18 years of age, 19 and 24, 25 to 30 and 31 to 40.

Comparing situations and reasons for use shows great stability from one year to another, which suggests that the practice of mini-messaging has become a lasting phenomenon when developing towards increasingly more varied user profiles but who follow identical logics of use. Let us add,

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[1] Exchanging mini-messages is an innovating practice difficult to relate to other forms of interpersonal communication. We decided to here present the empirical results of our surveys, without relating them to sociability studies existing in personal and telephone interviews. We are also presenting succint bibliography based on works by sociologists and psychosociologists who have worked on subjects of everyday life and the way in which rules and regulations in the social order reproduce and emerge from this everyday life, although in our opinion, it is too soon to say whether this hint for reflection will be fertile for interpreting the practise of mini-messages in a long lasting manner.

moreover, that a diversification in SMS use is being observed today: from the practice limited to interpersonal exchange of mini-messages in the year 2000 to development of the practice of the *chat sms*, particularly amongst students between 15 and 19 years of age[2].

THE MINI-MESSAGE: A WAY TO COMMUNICATE BETWEEN WRITING AND ORALITY

The peculiarity of the mini-message lies in its hybrid form of spoken writing, a kind of "defrocked" writing inasmuch as it minimises the social function of the memory on the one hand, and on the other, it frees from servitudes to literalness and respect for form. When it is said that anything written remains whilst the word goes with the wind, definitively fixed writing with no possible modification is being acknowledged as an absolute value of filing and memory.

To a certain extent, the analogy of the mini-message with this capability of preserving writing is one of the specificities of this method of communication distinguishing it from the telephone conversation. Thus it is not rare to hear "that stays, this stays in the memory [...] I only keep those of my fiancée (Sebastián tells us) because they are precisely for me and that is why they stay, they are kept to have, not a souvenir, but a small side like papers placed on the side to be able to re-read them now and again, it is not unpleasant. I have one there, I have had it for four months" (Sebastián, 22 years old). This is also the case of Stéphanie who acknowledges "that is what is good, that stays and I see my mini-messages all the time. I keep them, the ones I like, it's like a letter, but that's how it is " (Stéphanie, 25 years of age).

However, writing here loses its absolute value as a file. If the mobile becomes an object for conserving personal memory, whilst at once a private diary, a chest keeping your secrets, it is in fact relative because it is not final. As Virginie says: "Well, messages can also be kept in the memory but it's not the same as a verbal communication. Like a letter, I like to keep our mail. Well, I keep my messages and when I no longer have any memory, I wipe them out (Virginie, 19 years old), and also Florence: "I have 4 or 5 that I regularly change" (Florence, 37 years of age).

The fact that only ten mini-messages can be stored in a mobile telephone is obviously a technical restriction that explains why messages kept are continuously renewed. But this is not the only factor. In contemporary societies, the mobile bears with it social values in relation to time accelerated, from one place to another in perpetual movement. A support for a live, short lived memory, the mini-message also reflects social values moving away from a written culture that has the force of law and is related to a verbal culture in a civilisation of the image, being transformed as it becomes rich with new experiences of those that carry it.

On the other hand, what can be said of the form that mini-message writing takes? The most frequently phonetic, i.e., expressing sounds made to be heard, writing becomes a pure copy of verbal language and breaks with the servitudes of form with respect to tradition. For example, Samuel (17 years old) writes: "It's always me that rings you and I want my cassette with my song, I don't have it! I hope we see each other during the holidays. In any event, we shall meet on the 4th for the results. Kisses"[3]. Here we can see how phonetic

[2] All the authors of this issue of the magazine were asked to give minimum figures for mobile and SMS penetration. The French author, in a separate transcription of the article, stated: "The only figure I can give is that there were 1.5 million SMS messages sent in 2001 through Orange subscribers only. The company does not want to give any further data". (Note of the magazine's editor)

segmentation of words can be freed from grammatical and spelling conventions. To a certain extent, does this imply consequences for the practice of formal writing?

In our cultures in which the link between writing and elitism has always been strong, let us think here of the inheritance of a civilisation in which mediaeval clerics were frocked, of fears expressed as regards the impoverishing effect of the mini-message on language. In order to shore up this hypothesis, it would be necessary to consider the mini-message as a degraded form derived from conventional writing, a textual change in which the referential would be the written literary or epistolary language. Or rather do we think that the mini-message is an autonomous form of non verbal communication that should be interpreted in relation to its practical effectiveness and also to its social effectiveness for sharing, i.e., building, an identity with the group or with the person with whom communication is made.

PLURAL, CREATIVE FORMS OF NON VERBAL COMMUNICATION

Limited to 160 characters, the SMS writing space has created conditions for a recreational way of communication, and makes for more or less creative writing games. But, above all, it is the intention to play with the space that explains the forms of writing created and not the impossibility of fully expressing the content of a message which forces and obliges corruption of the language. In fact, most respondents, like Carole, replied to the question of whether they knew that 160 characters were an annoying limit: "I have never reached the 160 characters. Besides, I don't know what that means, whether it represents 30 words, 50 words... I know nothing about that " (Carole, 28 years old) or like Sylvie: "For now, this has never bothered me as I manage to cram in everything I wanted to say. It's more than enough. I send more than three words anyhow, though it may vary. From full pages to a few words " (Sylvie, 35 years of age). Some sometimes acknowledge that they sporadically have to send two. This is the case of Ghilaine (20 years old): "No, that doesn't worry me. At worst, I send two", or Stéphane (28 years old): "It's too little at times. But that's rare. In general, 160 suffice", or still again Yann (22 years old): "Bah!, you get used to 160 characters but... at times it's frustrating, but not often because when there is a lot to say, you have to send two. This happened to me, but you generally adapt to those few lines".

The perception of a new, original communication format explains, then, the recourse to tricks of language, always claimed on a recreational plane. But, far from being a common feature, mini-messages offer a rich variety of vocabulary expressions, they are shown in a large variety of styles according to their content, their form and their level.

Respect for form may reflect a concept of mini-messages in certain cases. Such is that of Claire, who plays less with writing than with drawings that can be integrated into the text: "That depends on people. I confess that abbreviations aren't my strong point. It must be because I live in a traditional area. I always write the full word, I don't make spelling mistakes, I don't put my foot in it. I re-read my messages, I don't like there to be mistakes. I use abbreviations very few times. But small symbols, small smileys" (Claire, 24 years old).

Pleasure for some will, in fact, consist in the mini-message obliging thinking to be condensed, to carefully search for the most appropriate word just

[3] Samuel's French text is written in phonetic French, i.e., with spelling simulating sounds as much as possible (T's N.)

to avoid all ambiguity, to synthesise ideas, "to get to the point ", as Stéphane (28 years old) would say. I am very much at home with 'one-touch-messages'. Yes, in those where everything has to be summed up in three phases... I think I have my head fairly concise. I go right to the point and I think I have much more humour .. Well, that's how I see it". On the contrary, others will find pleasure in playing with words, in taming the language, in creating ambiguity, like Christian: "Messages, messages often with a double meaning. You can say there is a lot of playing on words, many tricks. Because I think that over and above spelling, that allows ambiguities to be well used. It's fun " (Christian, 45 years old).

For Christophe, the communication format frees his creativity because of the streak of poetry: When writing, I often do so in a fairly fun type of way, that is, I amuse myself sending alexandrines. It's funny because there is a little of reflection and a little of spark. That's why I often send poems. I'm not a poet, rather are they tricks, a little like Boby Lapointe[4] with his plays on words, with quite funny tricks (Christophe, 25 years old). Corinne prefers the telegraphic way: "I do it like a telegram, I remove all the subjects, but I leave the words whole. I write: broken down, 4th flight, peripheral, Porte S. Ouen, I don't know what to do " (Corinne, 37 years old).

The different examples show that everyone makes communication space of it in a recreational, creative way. On the limit, the narcissistic pleasure of inventing an original language replaces the traditional function of communication defined as a reciprocal exchange with the purpose of transmitting information. Marion sums this up by saying: "It's an amusing trick to write it. Everything lies in fact in the form. I wonder: hey, a message is sent for nothing, it's recreational, games for points, the little words used, it's fun " (Marion, 20 years old).

In any event, the mini-message is perceived as a completely new communication fashion, but hybrid and difficult to define. Virginie's comments sum it up well when she says: "I don't know, I don't know how to say it. It changes me, it changes my old methods of communication like the telephone. I don't know, it allows me to change. It's another mode of communication. I wouldn't know how to say why I like this so much. Yes, I don't know. I don't know, it's the same, the written, the verbal thing" (Virginie, 19 years old). Spontaneously, adjectives or prefixes such as super, funny, "diver" (for amusing), "nice" are chained together to speak: "I think it is "diver" as a form of expression. I like it. It adapts well to my way of being. It's potent, it's "diver", it's funny..." (Stéphane, 28 years old).

THE PRACTICAL AND SOCIAL EFFECTIVENESS OF PHONETIC AND ABBREVIATED WRITING

Abbreviations and phonetics occupy an important place in the forms of writing mini-messages which users invent and personalise. Their use firstly responds to the concerns for practical effectiveness to write texts more quickly and gain time. It is not so much the inconvenience of the size of the mobile's alphanumerical keypad that explains the compression of the message as the explicit will of the issuer to gain time in certain contexts of use. And if the inconveniences linked to the mobile's technical and ergonomical functions have not escaped the adepts of the mini-message, it is also true that they are neither a curb on nor reason for corrupting traditional writing.

This is Alexandra's case who explains: "sometimes, instead of writing "one", you write "1"

4. Boby Lapointe is a popular French singer, now dead, who composed very funny songs with many plays on words. (T's N.)

to save a character. Or to go more quickly. Or to use phonetics a little. Or the sound of a letter for the sound of a word, things like that. I am going to 0tell you something very personal. “I love you” can be written “’t’m”[5], simply, it goes quicker.. It’s the perfect thing. I don’t have time, but I have to send a message. OK, that shows that you are in a hurry. I translate it like that. But I say to myself: Well, the person is in a hurry, but, however, had time to write a message " (Alexandra, 18 years of age). It is exactly the same as Brice says when he concludes: “Yes, that makes history, the thing of compressing messages so they may be written more quickly " (Brice, 17 years old).

The ways of abbreviating written text bears a relation to more or less standardised and more or less conventional symbols. Amongst those most frequently used are the ones that imitate phonetic sounds. For example, Brice explains that “for the word 'demain' [tomorrow in French], you write '2M'. It is quicker for the verb 'peux' [can in French] to use 'pe'. And things like that. It’s quicker. When there are words ending in 'e', in general I don’t write them[6]. In general, everything would appear to be understandable. Everything that sounds like 'il faut' ['it’s necessary” in French, pronounced 'eel fo'], instead of putting 'au' I simply put 'o'. Conventional abbreviations are also frequently used. "For example – Audrey tell us- for 'temps' [time in French], I write 'tps'. Other phonetic tricks: 'acheter' [buy in French] I write 'het'", or for "problem", Enmanuel tells us, I write 'pb'" (Audrey, 21 years old).

The most normal thing is for all possibilities to be exploited and combined at the same time. The example given by Sabina is eloquent in this respect: "For example, to write... there is someone who has written to me like that, as I have just read it: look, she tells me instead of “the main thing is that all your good friends”, she writes: CQTS[7] (Sabine, 22 years old). Other times they insert English words which are shorter. This is the case of Pascale (35 years old): "Today is shorter than 'aujourd'hui' [today in French]. I have no idea but English serves me well because the words are shorter. I put 'y' [of 'you', in English] instead of 'toi' [‘you’ in French], but only with some people ". Spelling mistakes are another conscious way of going more quickly: "Spelling mistakes are sometime made because when you must wait, when for example there are two 'ts' or two 'ls' and you have to wait to write them on the keypad, I put one and the person will understand it anyway ".

Practical effectiveness is not the only explanation for hybrid forms of writing mini-messages. There is real jubilation in inventing a language distancing itself from conventional writing, particularly amongst the youngest. In this case, it would seem that the social effectiveness of the mini-message may be a fitting description in the sense that it turns into a space of symbolic transgression, whereby adolescents create for themselves a common universe inaccessible to those who do not avail of the code, i.e., adults, but which works like a place of acknowledgement and reciprocal complicity between those who share the code. Christian thus comments on his son’s messages: "My son has a direct, phonetic language. He sometimes tells me the tricks. He is so full of spelling mistakes that you have to read out loud to understand what he means. But, I must say, it’s not serious. He alters words, cuts words in two. He sometimes puts it in backslang[8].

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[5] from "Je t'aime", in French. (T’s N.)
[6] As is well known, the final "e" in French is mute and is not pronounced. (T’s N).

[7] This is an example of abbreviation as quoted by the respondent, which means: ce (=C) que (=Q) tous (=TS), "what everyone ", in English. (T’s N.)
[8] Actually says that he puts it in "verlan", which, in French, is a style of speaking amongst young people used for many generations consisting in putting words back to front. For example, "père" [father] would be said "erèp". (T’s N.)

[...] It's not that I have any difficulty in understanding it, it's that, yes, it's his language. Of course, a little bit of mental gymnasium and that's it. No, it's OK " (Christian, 45 years old).

Where traditional writing symbolises law and institutions, with spelling mistakes school children, the only ones to claim them, have their desire to escape from the rule in common. Moreover, phonetic writing associated with the freedom to segment words and spelling provides a language in which its value proceeds almost from being secret, magic, in which the pleasure of invention runs neck and neck with the pleasure of decoding, reinforcing the complicity and feeling of existing in symbiotic fashion with the community in which they partake to create, thanks to common reference points. This is what Marion says when stating: "Yes, in addition, words are abbreviated. You don't write as if you were writing on a sheet of paper. The curious thing is to decode the tricks. Words can be joined, but then they have to be separated and this produces curious phrases. It is "diver". The 'je t'aime" [I love you in French] is written 'J tem', often jokingly. It's always the same. There are tricks like writing 'biscornus', and that means nothing. Persons who read, you don't write badly with capitals. Mistakes are made. People, when they answer us, if it's the first time they are written to like that, answer with the end 'es' and all that, and then they catch on and imitate us. It would be difficult for a total outsider, I think. But it depends on the person, of course. You speak in English too, a word can be put in Spanish or German. It's not bad for tricks, punctuation, etc. The generations, also, because if I want to send a message to my aunt, it will have to be correct, because it depends on the person. You know what they will be like, if you are going to allow yourself to make mistakes or whether you must write well (Marion, 20 years old).

It can be seen here how the space of freedom that young people give themselves is conscious and connected to the mini-message. The choice of playing with the communication format available goes no further than the group of initiates. The adaptation of the rules of writing retakes its rights as from when an attempt is made to communicate with the "older generations" or in situations where the effort does not justify the fantasies of writing, such as exams, for example. It is sometimes in the amorous play where the value of writing celebrates the desire for a unique esoteric language, a kind of protective envelope against the outside.

This is the case of Audrey who tells us that as regards her fiancé, "they are lovely messages, you know?, that we write to each other, "diver" messages, you know?. They are not actually codes, well, yes, a little, well, no, we write "diver" messages to each other, you know? " (Audrey, 21 years old). This is the case of Emmanuel who, answering the question of whether he shares their own language between them with his fiancée, says: Yes, I think so. I sometimes think .... at the beginning is when we were under pressure. There wasn't time to say everything to each other, so we wrote with abbreviations. And it was necessary to remember: did you understand what I said? 'Ouais, ouais!' [onomatopoeic writing to say 'Yes, yes' in colloquial French], or it is done automatically or I answer with the same onomatopoeia, the same trick, and she has understood and as we get more and more hooked, the more tricks we have in common, and the more tricks we share, the more we invent. Bah!, now "nègre"[9] is spoken , you know?." (Emmanuel, 22 years old).

[9] Untranslatable phrase. "Parler petit nègre" is an expression to say "it doesn't matter how ", "to speak in an uncomprehensible fashion". (T's N.)

MINI-MESSAGING IN EVERYDAY LIFE

What place do mini-messages occupy in everyday life? For their hybrid characteristics involving discretion and a distance for reflection over the written modality in a support as innovating as the mobile because of its quickness, instantaneousness and immediateness of communication, mini-messages reinforce occasions for contact by hence reducing their ostentatious manifestation. A value for use of the mini-message is thus created in all circumstances in which arbitration between what is written and the voice is performed to the benefit of the written exchange in order to meet the need to communicate.

The mini-message way of communication may be defined from several elements. Firstly, the mobile's agility of use and of closeness:: "it [the mobile] is always at hand, but when there is someone who wants to come with us, or I don't know, to know the news, it is always at hand, it doesn't matter where, on holidays, at home, in travelling " (Virginie, 19 years old). In addition, it is like this because of the efficiency and concision of the written modality in comparison with long telephone conversations, since "it is very concise it is often super-more effective than if you make a simple call" (Claire, 24 years old) and for the discretion in the way you receive and the asynchronism of the message which frees from intrusive perception which the traditional act of telephone communication may don and messages leave both the emitter and the receiver time for reflection. "It's somewhat discrete compared to the telephone which is noisy and wakes everyone up", thus says Arame (15 years old), and also, adds Cédric, "there's more time to think, sometimes, than when you are called on the phone when I don't know what to say. Whilst with mini-messages, a few words well transmit what you are thinking, what you want to say" (Cédric, 18 years old).

Five large categories of social motivations may group together the multitude of situations linked to everyone's personal life through the everyday experience of people using mini-messages.

AVOIDING A TELEPHONE CONVERSATION

In the practices as observed, avoiding a long telephone conversation is the first reason for using the mini-message. The asynchronous nature of the exchange, i.e., the deferred time for the reply, the unilateral way of delivering the message ("thus, at least there's no embarrassment for what is said ", Stéphane, 28 years old), as well as for the concise, direct and synthetic nature of the mini-message ("as it lasts less time, the message is clear, it gets straight to the point ", Marie-Hélène, 25 years old) are, consequently, the main advantages as manifested by respondents.

Reduced to its minimum content, with no more rules of convenience, the recourse to the mini-message in strategies leading to avoiding a telephone conversations responds to a triple need: to save time (mini-messages, when sent, there's no need to talk for hours", Arame, 15 years old), to economise ("since, when you have passed what the contract allows, for example, it costs much less ", Sébastien, 22 years old), keeping in contact in any circumstance, even when you don't feel like talking or have nothing to say ("there are times when I don't feel like being on the phone, so I send a mini-message and I say to myself, OK, there's no need to talk. Sometimes it bores me, depends on the moment, you know? " Jaouen, 19 years old).

NOT CAUSING ANNOYANCE IN YOUR OWN AND OTHERS' SURROUNDINGS

The idea of not causing a noise or annoyance is a second reason for using the mini-message. In this case, the advantages are the discretion of the acoustic signal in reception and above all the written mode which allows for a silent exchange favouring confidentiality. With the purpose of managing actual availability for speaking and anticipating the other's and not thus imposing the content of a personal conversation on the surroundings, the mini-message has found its position both in public places and in unaccustomed time brackets or, also, in all situations where codes of coexistence in the company of friends make a telephone conversation to be somewhat bad mannered.

It is interesting to observe that at a time when mobile telephones are increasing, sometimes bringing with them an overtopping of the ceiling of social tolerance to the excess of demonstrations of the private as publicly expounded in neutral areas of social inter-actions, the mini-message involves a form of hiding the communication-show, without therefore leading to a renouncement of the act of communication.

This new use and this new spontaneity of the mobile phone works on the basis of reciprocal respect both for oneself and for the surroundings in public places. Virginie says it: "on public transport, there are people around, more discrete. I have actually received calls but I don't like it, even on the Metro, in public places, it's better to receive a message " (Virginie, 19 years old) or at the work place: "When I am with other people and need to say something to someone, well I think it's OK [the mini-message], because others are not annoyed by telephoning [...] and I also know when I am in the office, for example. There are some things I don't feel like telling " (M. Hélène, 25 years old).

The space for privacy may be more symbolic when, like for Arame, it is a matter of escaping from parental intrusion: "When I speak with my boy friend, I don't want my parents to hear " (Arame, 15 years of age). Social conventions linked to the time for calls may also be altered: "When I arrive home late, yesterday for example, I got home at 4.00 in the morning, and I had to call a colleague. I preferred to send her a message so the phone would not ring and I would not wake her up " (Claire, 24 years old).

To end, and as an anecdote, we shall here adduce as proof the testimony of Laurent who is concerned about the equilibrium of the ecosystem and explains to us that "whilst I am fishing, for example, I turn the vibration mode off. I mean that then there is no sound so I am not distracted, and I send a good number of messages. I can communicate being completely at ease, because I do not annoy the fish..." (Laurent, 23 years old).

Being able to communicate when a telephone conversation is impossible or very difficult

The statement made as regards the reason for using the message expresses the possibility of maintaining contacts under all circumstances and responds to the need to communicate in practical situations in which it is impossible to telephone. Just like the foregoing reason, the silent effectiveness of this mode of communication is presented here as the message's main quality. It effectively structures use in situations where noisy surroundings determine the recourse to messaging: "for example, if I am at a concert, and it is super noisy, and you can't hear anything on the phone, yes, then I send messages", Claire tells us (24 years of age), or "if you're at a party where there is a lot of noise, you send a message and everything's arranged ", Marion (20 years old) also tells us.

In an underlying fashion, an analysis of situations of use shows us that the message is a modality of impulsive communication enabling free rein to be given to communication pulsations, awakening the attractiveness of transgressing forbidden things in all ages. Acts of distraction are thus approached in situations constrained by rigid social norms. This is mainly the case with school children and students during the school year, but also with some adults in awkward work situations: "We don't stop sending messages in class because the telephone, in class..... Well, it's in class when I send most. I am all the time with my mobile particularly when they are not very important subjects, then that's where you relax..." (Ghislaine, 20 years old). And also when, like Pascal, "at a meeting or in the office, when I can't speak, I send a message, it takes me 30 seconds " (Pascal, 40 years old) or Laurent: "Two or three months ago, I was selling SICAV[10] by phone. So we were being well watched. I couldn't afford to call on my mobile. So I sent messages. It was very practical " (Laurent, 23 years old).

EXTERIORISING AND EXPRESSING EMOTIONS

Because of its nature as written and deferred and, at the same time, almost instantaneous, the message particularly allows sentiments to be exteriorised and an impulsive need to share emotions at the moment they are felt without wanting or being able to express them verbally to the other person to be responded to. Thus, for most of those who send messages, whatever their age, the message involves demonstrating their presence to the other person, in amorous and friendly relations.

"That's how, in general, I think it's easier to communicate to talk of love with a friend or with good friends [...] But, anyhow, it's easier to write to someone than to call, than saying it to their face. There are things I dare to say through a message that I would never do face to face " (Stéphanie, 17 years old). This is also the case with Pascal, though older: "I found myself with someone I liked and that I didn't make dislike me, so there was a privileged relationship. The pleasure this gives you, it's not worth losing. [...] To know you can send an emotion instantly. When falling in love, there are situations in which you feel like knowing where the other person is, you're not going to send an e-mail, or you don't necessarily feel like phoning, for any number of reasons, so that might be the occasion to have an immediate reply, or not respond immediately... And then there are things that are not necessarily easy to say, and also to surprise" (Pascale, 35 years old).

Amongst adults, messages are added to other everyday life affective exchanges. On the other hand, for adolescents who often take a risk for the first time in saying what they feel to other people, they are a way of discovering amorous relations because writing has an uninhibiting effect. Sabrina, who does not speak of her shyness, tells it: "I am very shy, so there are phrases I don't dare say to my boy friend, I love you, things like that, so I say it easier through a message " (Sabrina, 17 years old).

If the written mode favours the forming of positive, strong emotions, it nevertheless also tempers and smoothes out the excess of aggressive emotions. By avoiding verbal confrontation, a message facilitates control of aggressive emotions as Stéphanie's experience indicates: "I was a little nervous the other day, and I sent a text [...] I think that has an impact, I preferred to write than to have a frank conversation on the telephone, because I believe it would have been a lot more

[10] SICAV is a variety of financial investment in collective real-estate values. (T's N.)

wicked..." (Stéphanie, 25 years old). The message enables conflicts and excesses of narcissistic pride to be managed better, as Pascale says: "the other day, I went out slamming the door shut, I was crushed, and a quarter of an hour later, I sent a message, but I did not feel at all like calling the person and saying 'I'm shattered, please forgive me', but quite the contrary, it's exactly that which I wrote to her " (Pascal, 35 years of age).

PASSING THE TIME, HAVING FUN, RELAXING

Conversations through messages for one or two hours without stopping are also pastimes related to the game of remote interactive conversation (chats). When young people watch television or because they have nothing to do, before going to sleep, they relate: "that lasts three hours ... it's "diver": instead of holding a face to face conversation, you have it through the message. Instead of going for a coffee and calling, you do it from home. We send each other messages. That's it. You can even have three people at once" (Marion, 20 years old).

Arame says: "But sometimes you communicate by messages. You can spend hours and hours. And what do we say to each other? We talk. For example, we watch a game of football and when there's a goal, you write did you see so and so's move? In the end, it's the same for other things " (Arame, 15 years old).

As a game of interactive conversation, exchanging interpersonal messages corresponds to a situation of lesser use and with a tendency today to follow in the form of a *SMS chat* which offers the possibility of registering in discussion forums and of making contact with a false name or pseudonym with other people registered in the same forum.

THE MESSAGE: A DUAL STRATEGY FOR EXTERIORISATION AND LOSS OF PRIVACY IN MAINTAINING SOCIAL CONTACT

What meaning could be given to message communication in the context of maintaining interpersonal contacts? We shall start with the observations of psycho-sociologists like K. Scherer who considers that most emotions are caused by social interactions and that communication technologies increase the occasions liable to cause emotions because of telephone conversations held in all kinds of places and circumstances (Scherer: 1982; 2001). In reinforcing occasions for contacts in situations where the telephone conversation until then would be under the control of social conventions, the personal exchange of a message in fact multiplies effects on emotional life.

Indeed, the message not only brings out the expression of interpersonal emotions from their private niche in the most varied contexts and situations, but its content also translates private emotions from the affective life between those in love and friends. Unlike telephone conversations which cover a fairly wide spectrum of communications and interlocutors (from the professional to the personal), messages are mainly exchanged with a privileged core of two or three persons to manifest an affective thought, a symbolic presence for the other person.. "To whom shall I send it? To my girl friend and my best friend " (Jouaen, 19 years old); "To my best girl friend " (Sandrine, 21 years old; Virginie, 19 years old); "To my male companion (Pascal, 35 years old, Florence, 37 years old); "To my female companion " (Sébastien, 22 years old, Sébastien, 20 years old)...

A central, recurring theme in respondents' discourse, the message is thus an ideal support to

ensure permanent contact with the lover or best friend. Moreover, emotional contents are around 70% of messages: "it's to say I miss you or that 'I'm thinking of you'" (Marie Hélène, 25 years old); "I miss you, I'm thinking of you, things like that " (Ghislaine, 20 years old); "I send messages in general to say to a girl friend, for example 'I love you very much' or to my good friend that I'm thinking of him. I send messages of love, it delights me" (Stéphanie, 17 years old): "I send short, nice messages to my girl companion, so she can see I am thinking of her " (Jouaen, 19 years old, Sébastien, 20).

The manifestation of "nice words" in everyday life as exchanged in messages could be extended even further. The novelty does not lie so much in their content but in the possibility as offered by a message to exteriorise at any time of the day and in the changes this implies on the social processes of emotions. Because of the written, silent way of communicating, a message removes all constrictions linked to outside contexts, apprehensions linked to being overheard in the surroundings and the mental sense of shame linked to confrontation with the other person that the verbal word bears with it. Here we have a completely new situation in which the impulsive desire of emotions may be expressed without reserve. And unlike epistolary exchange, it conserves its spontaneity by reason of the instantaneousness of transmission.

To the conventions and social control of emotions surrounding a message must also be added lesser control of oneself with respect to the desire for expressing emotions in time. No more impatience, no more compulsion for speaking, without waiting, under the form of the written word. "When I want to, I do so, whenever I feel like " (Virginie, 19 years old); "when I feel like. When an idea crosses my mind. In this case, it is not obvious that a telephone call can be made without further ado..." (Pascal, 35), "it's having the need to say something and to be able to say it immediately" (Marie Hélène, 25 years old).

Message communication likewise constitutes a movement of retraction of oneself and of privacy. Of oneself, in the loneliness of writing, and of the privacy of the public scene. Exteriorisation and retraction work here like inseparable dialectics. At the end of a period when the mobile telephone will have brought with it an exhibition of emotions and of privacy running against the current of the civilisation of customs, in the sense of N. Elias (1976)[11], exchanging messages channels the emotion-show, offering the possibility of expressing authentic emotions. It would seem that as new mobile technology linked functions are being brought out, those which are inscribed in the continuity of the movement for the domination and control of emotional behaviours in public strongly influence the development of new practices of communication.

Because of the behaviours it engenders, the message participates in creating social rules under the form of a new "savoir vivre" (knowing how to live) which regulates and channels emotional overflows that might threaten interpersonal relations. To this effect, the message is an exemplary model of social conduct showing how the appearance of new behaviours may influence the social code and participate in building new collective norms. As D. Picard recalls, basing himself on E. Goffman's analysis of interaction rituals, "savoir vivre" makes a ritual of and regulates relations; it constitutes a great strategy

[11] According to this German sociologist, who has studied the evolution of Western customs from the end of the Middle Ages to contemporary times, the civilisation process turns into a movement of social repression of the affective, emotional, corporeal and sexual impulses of the public scene, in the sense of causing their manifestations in the private spheres of intimicy to be rejected. This increasingly more pronounced privatisation of compulsive demonstrations that are progressively taking the form of interiorised self-containment until becoming unconscious explains the evolution of moral norms, of "savoir vivre" and of the psychic structure of individuals.

which enables situations and delicate moments in social life to be managed, which moments are almost always related to the defence of “face” or of “territory” or establishing or breaking a contact” (Picard: 1995, 17). Motivations for using the message are witnesses to this dual strategy of saving face and territory, and of a spontaneous need to be placed in the privacy of the rules of “savoir vivre” in new mobile telephone uses.

Up to the present time, and even beyond, the disorder the mobile telephone has introduced as regards “interaction rites” in public places is demonstrated by the loss of reference points having to do with the interiorised coding of the rules of play. What to think of the person lost in his own thoughts on the train who is ostensibly offered the content of your telephone conversation? Who is the one taking over the other’s terrain? Is the “non ratified participant”, according to E. Goffman’s expression (1987), the one not admitted to participate in the conversation but who makes an ostentation of intrusion by his sighs or the eagerness of his curiosity and his interest in following the conversation? Or is the orator who abolishes the traditional codes of decorum the one to impose keeping a distance and accentuating reserve in public places? In front of unknown persons, found above all in public places, the usual norm is to show indifference. Or it can be seen that recourse to reciprocal unawareness in these relatively new interaction situations can no longer be maintained. The embarrassment and anger that such situations give rise to are sometimes there to show that an illness linked to the absence of social codings has occurred.

In this conflict between the irresistible desire for social contacts and emotions and trampling on reciprocal respect for social obligations, the message responds then to the challenges necessary for establishing a new “savoir vivre”: challenges for keeping territory and saving face.

These two notions, introduced by Goffman, designate the two sides which articulate social relations being kept in equilibrium and in reciprocal respect. The face designates the valued image of oneself which everyone seeks to make known in social relations. The face expresses itself in its composition, the staging of itself according to the socially recognised model. The face manifests itself through respect and consideration for itself and for the rest by virtue ”of the combined effect of rules of self respect and of consideration of the fact that, in meetings, each one tends to drive oneself so that one’s own face and that of the other participants is sufficiently well preserved" (Goffman: 1973; 1974).

Due to the retraction of privacy that the message allows in reply to demands for discretion, the transposition of the aforedescribed train scene does not embarrass the two players where each one loses face. Faces are saved whilst the territory, in the material and symbolic meaning, is preserved: the territory of possession enjoyed by the owner of the mobile who continues handling his object like an extension to himself and the symbolic territories of one and the other in the sense of privacy, i.e., of their right to a space preserved from any usurpation or any intrusion. In fact, as Goffman stresses, "in the centre of social organisation can be found the concept of right around this centre, the vicissitudes of the defence of these rights [...]. A certain type of right then appears as decisive: rights are exercised over a territory " (Goffman: 1973, 43).

SOME EXAMPLES OF ABBREVIATIONS USED IN THE SMS

The implicit rules are:

- Abbreviate everything you can ("slt" for "salut")

- Match writing to pronunciation as much as possible, i.e., letters and figures pronounced phonetically ("Tu C" for "Tu sais")
- Use numbers that indicate useful sounds ("2m" for "demain")

Although not stated here, many Anglicisms are used in France as they are very comfortable due to their conciseness and frugality in letters.

ABBREVIATION	FRENCH MEANING	ENGLISH MEANING
keskispass?	Qu'est qui se passe?	What's happening?
pkoi?	Pourquoi?	Why?
slt	salut	Health
koman?	Comment?	How?
koman sa C paC"	Comment ça c'est passé?	How was it?
C2	C'est tout	That's all
Tépala?	Tu n'es pas là?	Aren't you there?
Kestufé?	Qu'est-ce que tu fais?	What are you doing?
T ou?	Tu es où?	Where are you?
KeskeC?	Qu'est-ce que c'est?	What is it?
Tu C	Tu sais	You know
2m	Demain	Tomorrow
jt'm	Je t'aime	I love you
Jtem	Je t'aime	I love you
2min	Demain	Tomorrow
K7	Cassette	Cassette
Ki	Qui	What

Source: Laurent Henin and the author herself.

CONCLUSION

Messaging is increasingly less confidential. On having confirmed the expansion of messaging to increasingly higher age brackets than one or two years ago, messaging amongst some is seen as the main and almost sole mode of communication with the mobile in detriment to verbal conversations. With regard to the Scandinavian message communication development model, this evolution could be turned in years to come into the implementation of a new way of maintaining parents-children ties in everyday life. A decline in the advantages of the message as perceived in the circle of domestic relations will then strengthen a practical function of vigilance and emergency in certain family life situations in a mode perceived as less authoritarian by children and parents. Beyond the plurality of situations of use in which the message may involve maintaining interpersonal ties, it is concluded that it is always in the sense of strengthening contacts in a continuous time and without interrupting the tie, made possible thanks to absolute bodily disengagement (since the voice itself disappears) in the relationship with the other person.

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MOBILE COMMUNICATION. USE OF MOBILE PHONES AS A SOCIAL PHENOMENON – THE RUSSIAN EXPERIENCE

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The article presents the Russian experience in mobile communication and it speaks about the important social impact that it is having, basically in Russia'se two main cities: Moscow and St. Petersberg.The author thinks that it is still a rather expensive devise which will nonetheless be increasingly used by the emerging Russian middle class.

The article also points out to the SMS use by Russian teenagers, and less by earlier adolescents, using both Russian and English, with greater emphasis on the latter due to its international relevance, so that the result is a sort of hybrid Russian/English language.

Key words: Mobile phone, GSM, SMS, text messagerie, information and communication technologies (ICT), information society, youth, socialization, communication, primary group.

Introduction

The rapid development of information and communication technologies (ICT) and the increasing use made of them in all spheres of economic and social life have substantially changed the ways Russian people learn, work and participate in social activities. They play an important role in boosting growth, ensuring sustainable development and improving living standards.

Russia signed the Okinawa Charter on the Global Information Society (July 2000) and participates in international efforts to facilitate its formation. Awareness of the advantages resulting from dissemination of ICTs is growing in Russia and readiness for the digital world is increasing.

Mobile communication is still considered a new ICT in the world. Its rapid penetration in Europe started at the beginning of the 1990s. The mobile telephony boom started in Russia later, in 1999.

The object of this paper is to illustrate this thesis whilst endeavoring to assess the general status of mobile communication in the country and the use of mobile phones by Russian youth (18 to 34 year olds are considered as youth in Russian sociology)[1].

GENERAL CONTEXT

Access to modern telecommunication infrastructures is one of the major factors in a country's readiness for an information society. The main indicators of information infrastructure are fixed and cellular telephone communications.

Fixed telephone communications: local, national and international long-distance fixed telephone voice communication remains the main type of network connection in Russia. Its volume of services is increasing by 5-7 % a year and makes

[1] As it is stated elsewhere in this journal, the concept of "youth", as to what years of age, varies considerably from country to country. (T's N)

for 60% of the monetary value of the information and telecommunication market. A total of 32 million telephone sets were connected to public telephone networks (PSTN) at the beginning of 2001. "Telephone density" (the number of telephone sets per 100 people) is 21.3 compared to 59.5 in developed industrial countries and 15.1 as the world average. Whilst the "telephone density" exceeds the world's average figure by 1.4 times, the territorial telephone density (number of telephones per 1 sq.m) makes for just 27% of the world's average Russia has 12.5% of the Earth's territory and only 2.4% of the world's population so the population density (a very important indicator for ICT dissemination) is somewhat low. But density differs substantially from region to region. The lower the density the longer local and inter-city communication channels must be (the most expensive components of telecommunication networks). Capital costs of channels in Russia are 2.5 times higher than the world's average. A severe climate is one of the cost increasing factors. The capital costs of telephone communication in rural areas are five times higher than in urban areas. The availability of telephone services in rural areas is very low: telephone density is less than 10 per 100 people and only 3% of users are provided with satisfactory telephone services; over 40% of villages and 37% of farms have no telephone lines.

The main national and international long-distance PSTN communication channels in Russia have been controlled by the national telecommunication operator Rostelecom, the leader on the Russian telecommunication market. The main communication lines are over 200,000 km in length, of which modern digital communication lines make up over 100,000 km.

The company provides transmission for the major part of inter-city and international traffic, as well as the functioning of land based television and radio broadcasting channel networks. Rostelekom connects Russia with 211 countries; it has direct international transmission lines with 75 operators in 72 countries.

State organizations and departments, television and radio broadcasting companies, national and foreign operators, as well as Internet providers are customers of Rostelekom's services. It provides them with a wide spectrum of up-to-date communication services, such as:

- data and facsimile transmission through the dial-up public network;
- intercity and international roaming for national wireless connection operators;
- access to Russian resources and to the Internet;
- lease of international digital flows (channels), of practically any volume, to anywhere in the world.

In 1994, Rostelecom and other state controlled regional communication companies established in the times of the former USSR and called "traditional" operators were integrated into the Svyazinvest open joint - stock company. At first, this company controlled about 90% of the country's communication network infrastructure but its share in electric connection profits is gradually reducing, It came to only 60% in 1999.

The monopoly as held by the companies comprising Svyazinvest recently became shaky due to rising competition from other companies: Transtelecom (the Railroad Ministry's communication operator), Gazkom (Gazprom's corporate network), Enifkom (RAO UES), which have substantially lower cable line laying costs. Transtelekom plans to become the second national "Operator of operators" after Rostelekom, so that

it could control up to 20% of Russia's electric connection market by virtue of using brand-new digital technologies.

Many experts believe that reforming this industry is one of the most urgent tasks in the sphere of telecommunications. Problems of deregulation, demonopolisation and boosting of competition are also important for other segments of the telecommunication market.

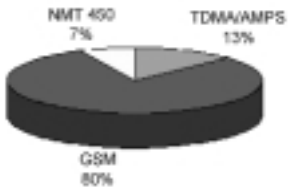
The following types of communication networks exist in Russian territory:

- the interconnected communication network (ICN), a complex of technologically combined public communication networks (PCN) and departmental networks equipped with general centralized administration, regardless of their departmental jurisdiction and forms of ownership;
- allotted networks (private commercial networks used by individuals and legal entities);
- industrial and technological communication networks of enterprises, departments and organizations (without entering PCN);
- communication networks of intergovernmental organizations.

As of December 2000, fixed telephone communication in Russia comprised over 30 million phone numbers. Six million people are currently waiting for a telephone connection to be installed in their homes. At the same time, traditional operators provide 75% of the input into the development of communications. Local telephone connection tariff rates are lower for the population than their initial cost. Payback time for capital investments in local communication infrastructure is 25–30 years.

Cellular telephone communications have not been handled by state-run telecommunication bodies. Development was liberalized as from the beginning and this makes a big difference. Regular state statistical data on mobile communication development and use in Russia is so far non-existent. Lack of governmental information was compensated for by the results of public opinion polls, expert assessments and case studies. Data from various sources may be substantially different

Figure 1



and we relied on the most trustworthy sources. The situation with mobile phone use is rapidly changing in Russia, and, therefore, available data quickly becomes out dated and assessments may be incorrect if the dynamics of change are not taken into account.

Russia has been late in developing its mobile communication market compared to other European countries. This can be explained by the general socio-economic crisis in a country undergoing transition, by the high cost of handsets and subscription and by limited services on offer at the beginning.

The mobile era in Russia commenced in 1994-1996. At that time, according to expert estimations, less than 1% of the population used mobile phones. Users were mostly male, elite and 38-45 years old. mobile communication boom started in Russia only in the second half of 1999 - 2000. In October 1999, the number of cellular connection network customers reached one million people, and by January 1, 2001, there were 2,5 - 3 million customers. According to data from the Russian Ministry of Communication, there were 2.5

million cellular phone users in Russia at the beginning of 2001 and 5 million users at the end of 2001, about 70% of whom use the European GSM standard. 3.7-4 million live in Moscow.

Cellular connection networks currently operate in almost all the Russian Federation's regions, except for the Republics of Chechnya and Tuva.

The first two cellular communication operators appeared in Russia in 1992-1993 in Moscow. There are two major operators today: VimpelCom and Mobile TeleSystems (MTS) who provide services to 60% of all cellular phone users in Russia.

There were 400,000 users in 1999 in by October 2000, there were 720,000 whilst at the end of 2000, 1 million people were using the service. 54.8% of users take MTS services and 37.6% use VimpelCom / 5 /. In all, there are 12 mobile communication operators in the country.

The reasons for the growing demand in 1999 were a reduction in the costs of handsets and services and an increase in the quantity of services (incorporation of an answering machine, organizer, e-mail, modem etc., etc). Other factors contributing to the upswing were huge improvements in the quality of supply in recent years: quality of connection; coverage of mobile networks (expanded from urban conglomerates to almost national coverage); handsets becoming much smaller lighter and easier to carry.

Much has changed since 1999:

- prices have dropped;
- l"service providers" have entered the market, selling subscriptions and packages of services;
- the choice of different mobile telephony options facing Russian consumers became very wide. Various operators and service providers currently offer dozens of different tariff rate packages.

Severe competition between operators was the main reason for these changes.

As yet, there are practically no statistics on the socio-demographic parameters of use, no statistics on gender usage, no statistics on the number and duration of calls. A poll survey of September 2001 conducted in Moscow showed that the number of cellular phone users in Moscow rapidly increased over 1999 - 2000 and the first half of 2001. Fifteen percent (15%) of Moscow residents used the mobile phone (7% for St. Petersburg residents) at the beginning of 2001 and 31,3% of Muscovites used mobile phones according to September 2001 data. 54.4% of people aged 18-29 use mobile phones and 6.3% of people who use mobile phones are over 60.

More interesting figures are: an on-line March 2001 survey of Internet users showed that 54% use mobile phones. Those Internet users who have no mobile phones said that they could not buy one because of the high price (82% of respondents) and because the cost of services is too high (55%).

In the estimation of experts, the rates of growth are likely to slow down for two reasons. First, the minimal cost of cellular phone use is equivalent to about 10% of the average wage in the country. For mobile communication to become popular with the masses, either income must rise by 2-3 times or costs must sharply reduce. Second – the Moscow region mobile phone market may reach saturation level by the end of 2002.

Mobile phone prices widely vary. They are produced for different income levels and consumer categories. The simplest version will cost $45 US, the latest may cost up to $300-400 US. Service costs are also very different, depending on what tariff rate you use, what time of the day etc. It varies from between 5 and 30 cents a minute, and according to expert estimation the average cost of one minute in Moscow is 20 cents. Taking the

Russian population's income into account, mobile telephony is still very expensive.

The 4major firms present on the Russian market are western: Ericsson, Samsung, Nokia and Sony.

The European GSM standard is the main system used in the country, and Scandinavian and American standards are also being used.

Users of GSM networks form about 60% of the total number of cellular connection network users. These networks attract customers by their high quality and digital connection confidentiality, as well as reliable protection against telephone pirates. Since 1994, the number of these networks' customers has been doubling annually. Despite the serious consequences of the August 1998 financial crisis, GSM networks continued to improve in 1999. The number of GSM network users in Russia as of 1 January, 2000 came to 777,164 people, which is more than twice as much as at 1 January, 1999. Cellular networks of this kind provide their services in 226 cities throughout Russia within the territories of 60 "subjects" of the Russian Federation. The national roaming service is provided within the territories of 49 "subjects" of the Russian Federation. The Mobile Telesystems closed joint-stock company (MTS) has 147 roaming partners in 76 countries throughout the world, which is the largest number amongst all operators.

Over 70% of all mobile phone users in Russia use the Moscow and St. Petersburg cellular connection networks. This situation is fully understandable and may be explained by the high business activity in both these Russian cities, the higher earning capacity of citizens and low tariff rates for cellular connection services.

Cellular communication networks encompass all 89 Russian regions but for Tuva and Chechnya. 75% of mobile phone users live in Moscow and St. Petersburg.

The major mobile communication market players have just started to attack the regions. Competition is very severe, some regional companies are ready for take over, others to compete. Construction of regional networks is just beginning and according to expert estimations they will start to actively develop by the end of 2002.

A substantial increase in the number of users is expected in Russia's more remote regions such as Kuban, Siberia and the Urals. The number of users there rose by 44-61% from the beginning of 2001 to May 2001 (whereas in St. Petersburg it rose by 21%).

In Europe in the early 1990s, a mobile phone was looked upon by the majority of society as an expensive "toy for the boys" / 11 /, suitable mainly for businessmen. Such an attitude existed in Russia till 1998-1999. It has now become acceptable in increasingly more sections of the Russian population to have a mobile phone in your pocket for business and private purposes. This change in attitude, this wide acceptance, happened suddenly and unexpectedly.

To understand how mobile telephony is perceived by Russian youth, the main consumer of this service (it is known that 54.4% of mobile phone users in Moscow are people in the 18-29 years of age bracket/7/, we conducted a socio-ethnographic survey with 40 respondents. We used the in-depth semi-structured interview method.

The survey showed that the social acceptance of mobile telephony amongst Russian youth is very high.

Those in the survey who adopted the mobile phone earliest belong to 1995, whilst the majority of respondents bought their mobile phones in 1999 - 2000.

Values and attitudes

Respondents have very positive attitudes towards mobile phones. They name the following advantages of using mobile telephony:

- being in constant connection, possibility of urgent communication any time anywhere;
- possibility of not missing an important call;
- being able to call and solve a problem when a fixed phone is not available (for example when Internet is connected or you have a joint connection with the neighbour's number etc);
- no need for paper and pen to write down a new telephone number
- to call from a shop and ask what to buy;
- to find a friend in a crowded place;
- to warn you will be late etc.

The negative aspects of mobile communication in the eyes of Russian youth are:

- expensive;
- mobile phones disturb others in public places, they acknowledge this but all do it, some nonchalantly, some awkwardly;
- when you lose your mobile phone you lose all your connections if you do not duplicate your records;
- you cannot rely on mobile phones for connection when visiting remote areas;
- necessity to change models often not to become obsolete;
- you have to recharge it often;
- no possibility to check the way your money is spent.
- you cannot transmit images and large volumes of data.

Gender differences were practically not seen in the survey, the times when the mobile phone was a "boy's toy" are definitely in the past in Russia. There is no statistical or ethnographic evidence that women use mobile phones less. In the eyes of our respondents "gender does not matter here". But the survey revealed some differences in attitudes - girls pay more attention to the look of the phone, its color, design, size and weight.

When discussing the reasons for buying a mobile phone, the answer was almost unanimous - "it gives comfort and safety".

Safety was mentioned in different ways including safety in a very physical way: people buy a mobile phone when they start driving a car. We have recorded several cases of such reason:

" I feel safe in my car when I can ask for help any time"

Prestige as a value did not turn out to be relevant, most respondents commented that "it became quite normal to have a mobile".

Mobility as a value was vividly present in the survey. A new concept of mobility is emerging which was well described by one of the respondents:

"The speed of life has changed, competition is increasing. Today mobility is the number of tasks you manage to accomplish. Mobility is about being successful and prosperous. "

Further utterances such as:

"Few people know the number of my mobile phone" or "He did not give me the number of his mobile phone" - show that new relations are being formed, they characterize a person's relationship with the world.

The survey showed that silence is hardly a value for youth, they treat noise as something natural in urban life:

" You go to the suburbs when you need silence, the city is about noise"

A new concept of solitude has appeared:

"Solitude is a state when your mail box contains only information messages (subscription lists)"

The main reasons why young people change their phones are: I got tired of it, much better ones appeared: lighter, better looking, with more possibilities etc.

The most common reasons for making a call from a mobile phone: a need to transmit urgent information , did not have time to call from a fixed phone, a need to make a confidential call, a way to save friend's money, a need to find somebody quickly. Giving an expensive and highly fashionable present to a girl-friend or to parents is also a good reason for buying a mobile phone.

Questions of monitoring

Interesting observation here - most respondents claimed that nobody is using mobile phones to monitor them but that they certainly do use it to monitor others (children and wife/ husband in particular). The fact that respondents do not realize that they are being monitored and that they realize perfectly well that they monitor others shows that mobile communication is not so far well understood. It is not so easy to define where freedom lies and where monitoring is but it is clear that these concepts are now "weighted" with technology. A new communication culture is being born. Speaking about mobile phones and monitoring, we have to understand that we live in a world of two contrary directed illusions. Illusion number 1 is thinking that you are not being monitored when you can be reached any time anywhere. Illusion number 2 is thinking that you can monitor others when the mobile phone only allows you to hear somebody's voice not knowing where this voice actually is. The possibilities of mobile communication and its impact on communication culture is still to be assessed.

Questions of reachability.

Like everywhere else, the need to be reachable for Russian youth is selective.

The very young and easy going respondents who somehow boast of their "information way of life" say:

"I want to be traceable, I like it"

The most common comment is:

"I want to be traceable only by my close family and best friends"

Several respondents mentioned that an answering machine is a way out with the problem of availability:

" An answering machine helps to decide whom to call back. I call back those with whom I can speak briefly. I am not available to those with whom I cannot."

Closely connected with the idea of reachability is the amount of use. From the point of view of availability, we found four models of mobile phones use:

1) always connected, never switched off;
2) switching off at night time not to be disturbed while sleeping;
3) switching off when near a fixed phone at home or at work;
4) always disconnected and switched on only when there is a need to call.

These models have to do with availability. These four types of behavior reflect different types of openness to the world: open (1), closed (4) and in-between.

Difference with parents

Age differentiation in the use of ICTs is one of the main trends of the global information society's development. Thus, one of our hypothesis was that there is a big difference in the use of mobile phones by youth and their parents. Our socio - ethnographic study showed that this hypothesis is true. Most respondents whose parents do use mobile phones mention that parents use them much less actively:

"My parents use the mobile phone less often than I do, actually only when something really important arises and they use it for very short periods of time as it is expensive."

Another observation is that the older generation has difficulties with mastering manuals and correspondingly with mastering different new opportunities. Parents use mobile phones as a device with which to make a call, usually ignoring other possibilities.

One of the advanced users said:

" My parents are really progressive people but they are no good with technology"

Other quotes of the same ilk:

"My parents do not use the technological advantages of mobile communication."

" They cannot master the manual, they know only the minimum which I've taught them."

There are certainly exclusions. Some respondents claimed that there is no difference in use between them and their parents. The analysis showed that in those cases, young respondents do not use many applications themselves.

A trend which has been observed already with PCs and Internet use and is seen with mobile phones - children teach parents how to use technology. With ICTs the whole culture of learning is undergoing change. In many cases children, present a mobile phone to their parents and grandparents who need a phone when they stay for months in their summer cottages where there is no fixed telephone. And Russian working youth often pays for mobile telephony services as young people in Russia often earn more than their parents and are better adjusted to a changing society.

A rapid growth in the age difference is observed. Not only is the speed of mastering different but the number of mastered possibilities is also. As many western scholars who conducted extensive research on the subject point out, using technology comes natural to young people whilst the older generation has to make a much greater effort". Our research confirms this conclusion.

Public-private

The changing values of the public and private in society, a much discussed topic in the West, is not yet clearly observed in the Russian context.

The data we collected are rather contradictory.

"It does not matter to me who is present when I need to talk" - is a common reaction.

And at the same time:

"It is certainly not ethical to discuss private matters in public. It is just a question of ill-breeding"

Young people say that nothing has changed for them in this sphere when a mobile phone appeared in their life and, at the same time, they say they do not feel embarrassed discussing personal matters in public places. The conclusion is that the notion of public and private is gradually changing under the influence of mobile communication. Every day we see girls in packed public mini-buses discussing their latest intimate shopping sprees freely and at length, boys commenting on last night's adventures out loud in public places etc. The change is here.

The study enabled quantitative data to be obtained. The cost of services per month varies from $10-15 US to $40-50 US depending on the number and duration of calls and the tariff rates used.

The number of calls varies from 1-2 to 30-40 a day.

The duration of calls varies from 0.5-1 minute to 10-15 minutes.

We found three categories of mobile phones user:

1) advanced users who actively use most of the new services and who monitor new opportunities and incorporate them into their life quickly;
   "Life is so interesting, developing so quickly. I like it and I do not want to miss any new opportunity, I always look for them."
2) confident users who mastered a set of services when buying a phone and live with it until some new service becomes evidently useful for common knowledge:
   "I know what I need to know for my purposes. When I have time to see that some new service can be useful, I bring it into my life"
3) dumb (foolish) users who want to know only how to give and to receive a call and do not want to know anything else.
   "A phone is a phone. I do not want to load my head with extra information"

Theoretically these categories are easily transformed into each other but if it does not occur soon after a purchase, the person remains in his category. Some psychological grounds seem to be behind those categories, which reflect models of information consumption in general. Further research is needed here.

SMS use

There are no statistical data on SMS use in Russia. SMS is not a widely used service in Russia today. Our qualitative survey of 40 respondents showed that only about one third of them uses the service and only a few respondents use it regularly.

One of the main reasons for the low uptake is the fact that only some of the latest phones have a Russified SMS service and it is an awkward service somewhat difficult to use. Some mobile phone models have standard message files, others have a system of intellectual input (printing 1-2 letters you have a whole word) but still they are not easy-to-use services. So, if you do not know English, you have to know the English alphabet at least to be able to transliterate[2] your messages.

[2] "Transliterating" refers to writing with Western characters the Russian symbols (T's N.).

Those who do usually become accustomed and say:

"I see no problem in writing Russian words with English letters, with many new abbreviations it is quite easy"

Abbreviate	Meaning
Brb	Be right back
K	OK
Mu3	Meet you at three
4u	For you
Luv u	I love you
Pls	Please

The number of short messages sent differs from once a week and once a day to 10 times a day.

SMS is treated be those who use it as "a way to save time and money". The survey revealed many reasons for using SMS:

1) it is much cheaper than phoning, particularly when you send an SMS abroad;
2) it is a way of saving money for your correspondents;
3) it is a very confidential way of delivering information; possibility "to have secret communication";
4) to leave a non-urgent message for somebody who will retrieve it as soon as he becomes available,
5) some young people treat SMS as fun;
6) it is convenient "when you do not want to distract a person with your call';
7) SMS replaces a pager;
8) SMS is useful when it is necessary to keep silent.

This variety of reasons shows how useful SMS can be though the level of awareness of these possibilities among Russian youth is low at present..

SMS language

To try to understand trends in the SMS message sending language, we have to divide users into those who know English and those who know the English alphabet.

The main trend for those who know English is to abbreviate English words:

Those who only know the English alphabet transliterate Russian words with the help of English letters. It is important to note that because of Internet chats and e-mails many English words have penetrated the Russian language. So there is a trend to use both English and Russian words in one and the same message.

In this case, English words may remain intact and may undergo some change in the direction of Russification. Here are a few examples of the trend to mix the Russian and English languages:

- "**Forvardni** mne soobschenie" (Forward a message to me)
- "**Replui** mne bistro" (Reply to me quickly)
- " Tvoi **soft** plokhoi "(Your software is bad)
- "Ya khochu pousat' tvoi **soft** " (I want to use you software)

Both groups use international mini-pictures to express their emotions:

a smile; dislike; I am very sad etc[3].

There is not only a SMS language but also SMS slang. This can be seen in the attempt to find a Russian person's name as a nickname of an

[3] Obviously, the author is speaking of what in the Western world is now communly spoken of as emoticons and smileys, about which very much is said in the rest of the articles (Editor's note).

English word, particularly a name of a firm or some device:

Boshik means a Bosch phone
Gen'ka – a Philips Genie phone
Lizhi - LG
Motia – a Motorola phone
Sonia - a Sony phone
Filia- a Philips phone
Erick - an Ericsson phone
Mal'chick (a boy) - a phone with an external antenna

Morda (a face in slang) - a display, etc.

Summarizing, we can name the following general trends:

- SMS message sending is happening in two languages at the same time so the English part tends to be international from the start;
- to find a short sign sounding like a long one, by abbreviating English words;
- to use English words in Russian speech making an English word Russian, creating a kind of Russian -English Weblish[4].

CONCLUSION

Social acceptance of mobile communication by Russian youth is high and growing. The mobile communication era is just evolving in Russia. High rates of penetration are characteristic only for big cities at present. The 89 regions are just taking off. A boom can be seen in the cities - Moscow and Saint Petersburg.

The main trends in mobile communication development seem to be universal: young people are the most active users of mobile phones and make up the majority of users; mobile telephony was a luxury at first, but as it becomes less expensive, it is finding its place in the middle class and becomes a necessity. (Specific features of mobile phone use are not on the surface but can be revealed with the help of international comparisons.)

[5] Analogous phenomenon as the Spanglish, a mixture of Spanish and English used by the Latin American immigrants into the United States, and constitutes a universal sort of hybridation pattern among languages all through human history (T's N).

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SUBJECT

THE USES AND MEANING OF I-MODE IN JAPAN

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The article presents a research about mobile phone and the adoption of the "I-mode" (mobile SMS) in Japan, and brings about the mobile phone culture among adolescents and youth in this country, showing in particular how the device is very significant as to the personality build up of its owner. In concrete, the article presents a great variety of ways that there exist to personalize the mobile phone.
As to the I-mode in particular, the article shows that it is a system very much adapted to Japanese ways, and that the Japanese people (especially teenagers) have adopted wholeheartedly, that it offers a whole display of services, that they consider it very safe, all of which justifies, in part, the fears that the Japanese people show in relationship to the internet.

Key words: Mobile phone, GSM, SMS, Text messaging, Information and communication technologies (ICTs), Information society, youth, socialisation, communication, primary group, role.

Introduction

The incredible success of *DoCoMo's I-mode*[1] in Japan has driven others in the mobile phone industry to ask: Is Japan a model for understanding global mobile communication and wireless Internet adoption?

- *DoCoMo* has 33 million customers and is the world's third largest mobile carrier
- *DoCoMo's I-mode* (an advanced wireless se vice providing Internet access) was adopted very rapidly and is considered the world's fa test growing wireless content service
- *I-mode* was launched in February 1999, by February 2000 it was growing at a rate of 1 million subscribers per month, and by September 2000 had surpassed 12 million subscribers

[1] *Do-Co-Mo is the dominant mobile operator in Japan (T's N.)*

The Western press has identified Japan as a nation of "Mobile Web Surfers" and "Lead Users", touting that for the Japanese "*I-mode* technology makes surfing easy" and "that with *I-mode* Japan is connected to the world". Our research indicates that this is an inaccurate picture, more a projection of our own desire for ubiquitous mobile Internet connectivity than the reality of Japanese consumers' behaviors and attitudes.

While the Japanese experience can offer clues as to how new mobile phone services can be developed in other countries, *I-mode's* success must be understood as a set of culturally specific communication solutions. This paper examines what those solutions are through a look at how the Japanese use and talk about *I-mode*. We would argue, then, that in asking what makes *I-mode* so successful in Japan, one must first look at how I-mode satisfies Japanese consumer communication needs and desires.

In part one, we present an ethnographic research overview examining the behaviors and attitudes surrounding mobile phones and *I-mode*. We

describe in some depth the Japanese cultural landscape addressing: phone usage, friendship, peer groups, personal identity, etiquette, purchase habits, mobile phone and other modes of communication. While we do look at some business issues and economic drivers surrounding mobile communication, our main concerns are the unique cultural issues which enable I-mode adoption, and use.

In part two, we offer some key findings that examine why *I-mode* is a near perfect fit for a specific set of communication and cultural needs. We believe that the success of *I-mode* is closely linked to the success of mobile phones in general and have identified twelve factors or drivers affecting their adoption.

In particular, we identify uniquely Japanese Sender - Receiver relationships, the need for "Perpetual Awareness", and argue that *I-mode's* text messaging allows users an informal communication channel generally free from the burden of maintaining the complex, hierarchical rules about how to converse, which characterize face to face and telephone conversations.

Approach

This study is based on a cultural analysis of many *I-mode* and other mobile service users in Japan. Using ethnographic field research we studied a broad range of individuals with many of the interviews being conducted in pairs or groups. The interviews were conducted in the context of the respondent's homes, local restaurants, schools and work environments. In each session there were one or two ethnographers, and in most cases a simultaneous interpreter. The interviews were qualitative, open-ended, and in-depth, typically lasting two to three hours. The data was captured using video (when respondents permitted), audio, and photographs.

Each interview covered topics of personal background, daily life and schedule, social networks, communication behaviors, acquisition and usage of the mobile phone, and expectations for the future of their phones and other technologies.

The interviews were supplemented with "street work" - extensive observations of groups and individuals using mobile phones.

Interview census			
GROUP	MALES	FEMALES	TOTALS
Teens	4	6	10
20's	2	1	3
30's	1	2	3
40's	3	3	6
Totals	10	12	22

Respondents:

1. Two woman friends:

- 33 year old married housewife with daughter – DoCoMo *I-mode* user
- 33 year old unmarried woman – *I-mode* user.

2. 38 year-old married professional man with daughter – *I-mode* user.

3. 45 year-old British ex-pat, technology professional – new Tu-Ka *I-mode* user

4. Two families:

- 44 year-old married man with two sons –*I-mode* user.
- His 41 year-old wife, housewife who works part-time – *I-mode* user.
- His son, 18 year-old – *I-mode* user.
- The son's girlfriend 17 year-old – *I-mode* user.
- His 12 year-old son – borrows mother's mobile phone for games.
- 45 year-old married man without children – AU KDDI EZweb user.
- His 43 year-old wife, housewife who works part-time– minimal user of mobile phone .

5. 23 year-old unmarried male – *I-mode* user.

6. Group of teens:

- 21 year-old male university student – Tu-Ka EZweb user.
- His sister, 14 year-old student – *I-mode* user.
- 19-year old female university student – *I-mode* user.
- 19 year-old female university student – J-Phone J-Sky user.

7. 43 year-old female American ex-pat – new Tu-Ka EZweb user.

8. 22 year-old unmarried female – new *I-mode* user.

9. Group of teenage music students:

- 16 year-old male – not mobile phone user.
- 18 year-old female – non *I-mode* mobile phone.
- 17 year-old male – *I-mode* user.
- 18 year-old female – *I-mode* user.
- 16 year-old female – *I-mode* user.

The way the norms of a culture are discovered is by conducting qualitative, in-depth interviews with individuals in order to understand their beliefs, ideas, and shared meanings surrounding certain experiences. Individuals are selected from both the "margins" and the "middle" of the culture so as to gain an understanding from several different perspectives.

Through these interviews, we collect a series of stories (both personal and cultural) that paint a portrait of the culture. Stories are how people make meaning, both as individuals and societies. Stories are used to both maintain and change the culture. Stories are the only means to expressing explicit and implicit needs. People take experiences and organize them into stories, choosing what to keep, what to emphasize, what to share, and what to hide. These stories characterize what is normal behavior, as well as explaining and mediating marginal behavior when it is encountered.

An experience is only remembered by linking it to a story, which in turn alters the experience to fit one of the culture's canonical representations of the social world. What people do is interesting, but what they say about what they do is even more important, because it will always be their culture's commentary on their actions. This is why there are often differences between the usage of products and the meaning assigned to their usage. A product's usage can be explicitly successful while the implicit cultural stories surrounding it can be those of failure, which will eventually hinder or stop the long term success of that product.

It doesn't matter if the details of a shared story are specifically factual or not, its themes and structures are inevitably the collective organizing frames and filters through which the world is viewed. Stories may be descriptions of explicit events but they also contain the implicit rules and principles that govern people's lives. These rules are best characterized by stories of "success" and "failure." To understand the "why" of a situation, one must interpret the stories of success and failure tied to that situation.

Finally by analyzing the shared success and failure stories (ones heard over and over again) we discover patterns that point to larger, shared, cultural themes. These themes, and cultural issues are the frames surrounding a new product or service idea (in this case *I-mode* and mobile phones) that explain the resonances or disconnects experienced by customers. These new understandings can provide 1) the identification of business opportunities, 2) an explanation of "mysteries" regarding successes and failure, and 3) the creation of more realistic scenarios of eventual adoption of services not currently in use. This is not futurism, since the values and meanings reported by respondents during interviews represent current, deeply held beliefs that transcend fads and short term "media spin".

ETHNOGRAPHIC RESEARCH SUMMARY

What follows is a brief description of the Japan research, in support of our key findings. It describes existing Japanese communication methods and aspects of the culture that we believe are central to the success of the mobile phone and I-mode. The summary includes the following topic areas:

Cultural Landscape

- Friendship
- Social circles and group interaction
- Change
- Phone as identity
- Design

Communication

- Communication between friends and loved ones
- Communication between family members
- Communication (general)
- Roles of sender and receiver in Japanese communication

Phone Usage

- Phone usage and etiquette
- Purchase process
- The physical phone
- Interface and features
- Learning
- Adoption
- Email (PC)
- Internet (PC)
- Voicemail
- Phone as platform
- Economic drivers
- Business model
- Billing
- Perception of providers

Cultural Landscape

Friendship - Japan

People tend to have large groups of friends, though individual relationships are not shallow. Friends tend to fall into the following categories:

- Family
- Friends from school (high school or college)
- Colleagues
- (For housewives) other housewive
- (For mothers) other mothers with children at same school

To show friendship bonds people will give each other mementos, such as small sticker photos of each other from "*Print Club*" or mobile phone mascots. In Japan it is easy to make friends because by virtue of being Japanese you've already gone through a screening process, you're already somewhat "safe".

There's a lot of risk in getting too close – if there's a bad relationship with someone the small size and isolation of Japan creates a situation where it's likely you will interact with that person again. Relationships that are more "shallow" or at a distance are "safer" in that regard. Japanese do want a sense of feeling connected and in a community. Phone-based email gives people that sense of community, and also allows them to enter individual relationships in a low-risk and low-commitment fashion. In Japan, knowing that someone is thinking of you is often sufficient as a connection, and provides a warm feeling.

Friendships may be different between the same gender and opposite gender. Housewives seem to talk more readily to each other than to their own

husbands. One-way phone emails allow a new form of communication that may make it easier for opposite genders to communicate.

Social Circles and Group Interaction - Japan

Group interaction is extremely desirable in Japan. Young people frequently socialize in groups of at least three or four friends.

Although mobile phone communication is exclusively single person to single person (no broadcast voice mail or conference calling), the communication may be in support of group activities, with sequences of one-to-one emails or phone calls making up a chain of communications. Given that, there is a desire to be able to support group interaction through the mobile phone.

One person may show their phone to another person so that they can read a message on screen. Although stores sell ear-pieces with a Y-connector (allowing two ear-pieces with one telephone) we did not see those being used.

As the phone enters (or is upgraded to *I-mode* within) a social circle at one or two points, other members of the circle are not pressured to acquire the phone but may feel more comfortable doing so given that others are moving that way. The change of devices and the subsequent change of group interaction styles (i.e., shifting to email) can take place rapidly, in as little as a month.

Change - Japan

There is great willingness to buy a new phone, not because of a significant lifestyle change, or because of technical obsolescence, but for fashion. What drives this purchase is not the obsolescence of old features, but rather the fashion of new features (slimmer, new colors, bigger screen). Providers support the change through regular release of new models, and easy and inexpensive transfer of phone numbers, phone books, saved messages, and other settings on the phone.

This type of ongoing change can be found elsewhere in Japanese culture and should not be dismissed as simply material consumption. The Japanese build for change, despite living in a culture of tradition and history. This can be seen in their construction (the most sacred shrine, Ise, is torn down and rebuilt every 21 years) and in their disposable and replenishable pop idols.

In Japanese, the word for change is *kawaru*, and it describes a process of rotation rather than evolution. The core remains the same. This notion of change is significantly different than found in other cultures where the outer change is used to signify a substantial change to the core (i.e., in America, a woman cuts her hair to announce to the world that she has moved on emotionally from a former relationship). For the Japanese, the inside is regarded with more permanence, perhaps permitting this comfort with the change to the outside. Since change is not bad, nor permanent, this mindset enables the Japanese to try new things on a (temporary) basis.

Phone as Identity - Japan

Within Japan, there is enormous pressure for individuals to conform to what is expected of them. One aspect of conformity is to be similar to others. The regular adoption of fads (i.e., *Print Club*, *Tamagotchi*, *Barcode Blaster*) are an example of conformity in Japan. *I-mode*, however, is not a fad, it is well-integrated into people's lives. The specific customizations of the phone, both inside and outside, are ways for the Japanese to express their own individual identity within a conformity-demanding culture. Everyone is using *I-mode*, but everyone's phone is different.

Some people are now using their phone to tell the time and have stopped wearing a watch. Operationally, it is probably still "easier" to check the time using a watch, but the identity work the

watch used to perform has begun to shift over to the mobile phone itself. It is conceivable that, with the right technological infrastructure, people might change their phone on a daily basis, the way people will change their watch.

This individualization is seen in other products from ordinary household objects to clothing to personal consumer electronics – there is a vast choice of products available in most categories.

Design - Japan

With many everyday products there is a strong sense of quality built into their design, along with a sense of wit and fun. These products (kitchen implements, gardening tools, hammers, etc.) are not high-design fetish objects, but rather a statement about how everyday should be lived – that the quality and fun does indeed belong in the practical everyday activities. The variety and wit of the mobile phone design is another example of this.

Communication

Communication between Friends and Loved Ones - Japan

"If you don't have *I-mode* email, you have to be telepathic," said a teen without I-mode or any mobile phone. People believe their friendships are closer because they are able to increase their mind-share with others by exchanging simple messages (via phone email) about their current activities or status ("I'm awake now," "Good morning," "I'm bored"). At first glance their emails may seem short and superficial. However, the fact that they send these short emails constantly throughout the day makes them aware of the other person in a new way, aware of their frame of mind and feelings. This type of awareness is very important in Japan because it makes people feel less alone. They said that these types of emails "deepen friendships".

The mobile phone provides a way for young people to make new friends. The phone itself can be a tool for an introduction, where one person may approach another and ask to see their phone. They will then offer their phone for comparison. In addition to the phone, they may discuss the specific ways that they have customized the phone (including custom screensavers or personal choices of mascots and straps). The phone also provides the vehicle for future contact. As part of this conversation, mobile phone numbers will be exchanged with the intent to send email to each other. (Although *DoCoMo* offers a feature whereby you can have a more typical email address associated with your phone number, most users simply use the phone number as the way to address their email messages.) This agreement is a way for two people to become friends.

This type of mediated introduction was seen most recently in Japan with *Print Club*. Large numbers of interactive kiosks resembling video game machines allow individuals or pairs to purchase a sheet of stickers of photographs (with custom backgrounds such as two hearts with a space for the faces). These stickers would then be exchanged with others and displayed on the outside of schoolbooks, etc. Young people would point to those stickers and identify them as "friends".

Communication between Family Members - Japan

Traditionally, husbands and wives have led very separate lives with minimal communication, especially during the day. Given the different schedules and long hours of work, couples would fall asleep shortly after the husband arrived home in the evening and there was little opportunity to interact. Using *I-mode* email, husbands and wives are exchanging simple logistics messages about their planned time to return home, availability for dinner, etc. These short and basic interactions make them feel that their relationship is closer. As in other cultures, parents and children are using both email and phone conversations to stay

connected while still allowing the child to have a feeling of independence.

Communication (General) – Japan

The Japanese provide and expect lots of verbal and visual feedback during any conversation. Ordinary face-to-face conversation, therefore, requires much effort and attention. *I-mode* text messaging has skirted all these issues by standing outside the face-to-face rules of hierarchy and context. *I-mode* messaging has removed much of the emotional balancing work required by voice and face-to-face communication. With text messaging, users have the ability to communicate without social obligation. Text messaging has been especially helpful in relaying difficult news—it allows the deliverer of the news to craft the message, and gives the recipient privacy when receiving it.

Roles of Sender and Receiver in Japanese Communication

In contrast to the US sender-centric culture (i.e., Americans may mutter "Pick up the phone! Pick up the phone!" when calling someone and hoping not to reach their answering machine instead), Japan has a balance between sender- and receiver-centricity. The sender has now been given the ability to send messages anytime, and often have them received immediately. The receiver can receive messages constantly, but not be interrupted unless they choose to be. The receiver has an obligation to respond to messages, but now has control over the duration of time before responding (from instantly to one day), creating a tension between synchrony and asynchrony. Although any user is always available, the flow of communication can extend over varying periods of time.

Custom rings are used to identify the caller. The recipient will use the ring not to screen the caller, but to identify the person and prepare him/herself to have the conversation. Thus, a feature similar to Caller ID (which is a controversial receiver-centric feature in the sender-centric US) is used to support both the sender and the receiver.

This diagram reveals a new category of communication in Japan: "Perpetual Awareness" of status & activity. This type of communication was an unarticulated need in Japanese culture that *I-mode* email has satisfied. Traditional conversation is relatively difficult in Japan because of rules of etiquette and hierarchy that must be followed. However, there is a desire for more "superficial"

PURPOSE	CHANNEL
Conversation	Face to face (verbal or non) Live phone conversation (longer) Short phone call
Logistic (planning and update)	Short phone call Voice-mail Mobile phone email (longer messages)
Perpetual Awareness of status & activity (to avoid samishii -strong emotion of loneliness when apart from others)	Mobile phone mail (shorter messages) Small gifts Face to face (verbal or non)

conversation to feel better connected to many individuals and groups, avoiding loneliness. *I-mode* email enabled the Japanese to bypass almost all the traditional Japanese formalities of communication, while allowing for a new casual awareness that was implicitly desired but until I-mode and SMS explicitly unrecognized.

Phone Usage

Phone Usage and Etiquette - Japan

For the Japanese, the home is an extremely private place. Visitors, even close friends, are not often invited over. Far more than in other cultures, social events involve arranging to meet in public, and the mobile phone is very useful in supporting the last minute connections. In addition, the

difficulty of finding places in a city like Tokyo that has no useful street addresses makes the mobile phone a useful tool for meeting up within the city.

In the urban culture of Tokyo, people are always on the move, so the mobile phone is used whenever they are out. Before going into, or immediately after leaving the subway (where there is no connection and usage is frowned upon) people will use their phone for either phone calls or checking and sending email. The phone will be used while walking to "squash time" (a Japanese expression for "killing time"), or while en route to tell the family that one is on the way home.

When users cannot take calls (for example, while at work) they may still have their phone notify them in case of the arrival of emails, perhaps just visually, but sometimes with rings as well. Phones are actively being used in many environments, especially for reading and sending email. It is not acceptable to talk on the phone in the subway or on the bus (in fact, stories about trapped radiation in the tunnels have emerged to justify this cultural norm). However, in these environments, it is acceptable to use the phone itself for purposes other than calls.

Some phones come equipped with "manner mode" which shifts the ringer to a vibrate notification, and includes an amplifier in the mouthpiece, to allow the user to speak very quietly. In general, the posture for speaking into the phone is characterized by one hand holding the phone and the other hand covering the mouth and mouthpiece, so as not to disturb others. Speech level is as quiet as possible. This subtlety of conversation is in contrast to the volume (and obviousness, given the range of musical sequences being used) of the rings. It is acceptable to have a phone ring in public (except on public transit) just not to be heard speaking into it. Tokyo, especially, is full of noise, from broadcast music in public places to sounds and electronic noises emanating from stores. The ring itself simply adds to that background of noise and is acceptable. However, in Japan one must know the context of the conversation to engage in it so hearing a one-sided conversation allows no participation and is therefore more "rude".

I-mode email (SMS) allows people to avoid unwanted "live" calls and still be available to others throughout the day. This is especially important when situations (like being in a meeting at work or being in the subway) prevent them from taking calls at certain times. Men use the mobile phone to receive messages from their wives while in meetings at work. Their wives are free to communicate with them without fear of interrupting them. Users have the ability to communicate without social obligation (i.e., a phone conversation would generate an invitation to get together that must be accepted, but may impact other obligations) by sending simple greetings through email ("I hope you are well," "My thoughts to you and your wife").

I-mode email is also useful as an easier way to say difficult things that cannot be said face to face ("I am breaking up with you," "Your performance at work today was not up to standard," "I am angry with you"). This parallels the Japanese tradition of gift giving – gifts are never opened in front of the giver, rather the presentation and wrapping is admired and the giver is thanked. The recipient can take the package into private and open it. In this way, their reaction need not be managed in front of the recipient (and vice versa), and feelings are never hurt. Eliminating the need to control reactions through difficult interactions is an advantage of personal email as offered by *I-mode*.

Using the I-mode phone for communication creates a "safe" buffer zone between people and the members of their social circles (friends, colleagues, family members). In Japan, personal communication is more formal and there are implicit rules that dictate well-mannered conversation. Context and hierarchy of the people involved in the conversation determine that etiquette. The mobile phone allows less formal and bounded communication since context and hierarchy are less present

The mobile phone in general is less expensive. Using the mobile phone is cheaper than using the home phone. Using email is cheaper than making a phone call.

Purchase Process - Japan

The phones are sold in provider-specific stores, as well as "discount" electronics stores. In these stores, the phones are presented in a bountiful display alongside the street, out of the store itself. These displays are ubiquitous. Word of mouth between friends, family members, and colleagues, all support a great deal of awareness of mobile phones before a purchase is made.

Si se es primerizo, se compra así. Pero si se es ya cliente, se compra al mismo proveedor porque esto permite 1) mantener el número de teléfono (lo que es básico, dado el número de interlocutores que se tiene), 2) guardar los mensajes, y 3) continuar acumulando puntos y conseguir mejores tarifas. Permanecer con el mismo operador significa simplemente buscar los teléfonos que éste ofrece, más que los que están en el escaparate.

The decision process is driven primarily by the specific physical appearance of the phone itself. If a phone is selected, the customer verifies that it has a color screen and that it supports email. Women tended to refer to the overall appearance, selecting phones that look attractive, while men would mention a specific design feature that they wanted (i.e., waterproof, screen size)

If someone is a new subscriber, he/she will pick from among all of the phones in this manner. If someone is already a customer, he/she is likely to stick with their current provider because this will allow them to 1) keep their phone number (which is very important given the number of email correspondents communicating through the phone), 2) keep their saved messages, and 3) continue to accrue points and get better rates. Remaining with the same provider simply means they only look at the phones that that provider offers, rather than everything on display.

The billing plan is not a key driver in the purchase and is typically the last decision that is made. The salesperson will suggest a plan, or they will keep their current plan. These plans are regarded as very complex and customers are not willing to go through too much trouble to sort out the "best" plan economically. They have trust that they are being taken care of well by the mobile phone providers like DoCoMo.

Customers may plan to purchase a new phone in the future to coincide with another event (i.e., starting university) but getting a new phone or even the first phone is not seen as a rite of passage[2]. It is just something that one does to keep current, like updating one's wardrobe.

The Physical Phone - Japan

There are a wide number of phones available from discount stores and DoCoMo/J-Phone/etc. stores. The displays are on the street, rather than just in the store, offering many different looking phones, with an inventory that evolves rapidly as new models are introduced. These stores are quite numerous and facilitate ongoing casual learning about phone models, supporting the desire to purchase new phones on a regular basis. The choice of the actual phone is very important for the Japanese and drives purchase (*see Purchase Process above*).

The phones themselves are often jewel-like in their design, for example using a delicately colored, pearlescent finish. The soft form factor and beautiful finishes lend the phone an almost electronic-pet like appearance, in contrast to the

[2] *Rich Ling, not only in the article published in this issue as well as in other publications makes the parallel behavior pattern between buying a mobile phone and the unexisting rite of passage from childhood to youth in present-day society. The same insight is presented by Carole-Anne Rivière, also in her article in this very issue.*

harder, masculine, black plastic consumer electronics devices seen elsewhere in Japan.

The outside of the phone is decorated and customized through mascots and straps. The strap hangs from the phone and that strap may have a decorative object on it called a mascot. Mascots and straps are externally worn – while the phone is in a pocket or bag the mascot and/or strap hangs outside of it. Mascots and straps offer two basic functional benefits: being able to grab your phone easily from a pocket (men) or a bag (women), and to distinguish your phone from others that look similar.

Mascots run the gamut from cute characters (*Sanrio*'s Hello Kitty) to a traditional *inro* (Japanese medicine container). They are often given by friends, or purchased as souvenirs of events. People may have up to three attached to their phone, as a personal memory of an experience or as a way of announcing part of their personal identity. As with many products, the stores offer a vast and rapidly changing choice of mascots. While men and women of all ages use straps, mascots are used more by younger people (but not exclusively).

The word means cute in Japanese and is present as a compelling and varied aesthetic in many different types of products and advertising imagery to appeal to men and women of all ages. Mascots provide a virtually unlimited outlet for satisfying all the possible forms, degrees, and variations of the Japanese need for *kawaii*.

In addition to mascots some young people place additional stickers and pictures on the outside of their phones. Just like keeping photos in wallets, young women place *Print Club* pictures of family members and boyfriends inside their phones behind the battery door. Custom decorated and illuminated antennae were also very prominent throughout Japan..

Interface and Features - Japan

One of the most popular *I-mode* services are the subscriptions that allow downloading of "screensavers," or an image or character that will be the backdrop of the mobile phone's screen. *I-mode* phones ship with Disney screensavers included.

The other popular service is the selection of melodies as custom ring tones. Users may select a single melody for their phone (as before, to differentiate their phone from others), while some assign specific rings to specific users, so email or phone calls from them can be identified simply by hearing the ring. In some cases, a group of people from a social circle (i.e., work friends) will be assigned the same ring. In addition to identifying the caller, people also described how these tones help them shift into the correct frame of mind before answering the call (i.e., a young woman speaking to her mother). Even if they are not able to get to the phone to speak or check email, the tones, associated with a specific person in the social network, create warm feelings simply by notifying the user that the other is thinking of them.

The melodies are also available from kiosks placed in stores and shopping areas.

For some users, there may be a single additional service that they make use of (surf reports, restaurants, weather, train schedules, news) that can be an extension of their identity or an investment in an activity that they find personally significant.

The *I-mode* menu of the phone can be configured so that these services are easily accessible (only a few clicks away). Although these services may be actual Internet sites, that is not how they are perceived by the users. They are simply the place in the phone interface that has that information.

The phone book function on the mobile phone is very useful. Users will have anywhere from 30 to 70 names and phone numbers stored in their phone. Often this will be the only place that a

number is kept. One woman described a weekend in which she left her phone at the office, and could not call any of her friends since she did not know their numbers.

The phone functions as a "memory device" – the word memory has two meanings here:

1. The phone can function as an organizer, remembering appointments and contact information. In an extremely urban, mobile, and non-PC culture this is especially useful.
2. The phone also holds personal memories through personal emails that are saved (like birthday greetings), on-screen images and characters, and personalized melodies for rings.

The phones provide the ability to save messages. The inbox can hold around 100 messages and one can save in a more permanent way about 30 messages. People will save messages that are memorable or touching (a kind message from a boyfriend, or a birthday greeting from a friend). When moving to a new phone but staying within the same service, the saved messages will be transferred.

Given the effort of entering *kanji* characters, some phones offer the ability to "register" certain characters, effectively creating a shortcut for future entry. This would be typically be a proper noun such as a city name.

Learning - Japan

Users are operating out of confidence, regardless of how much they have or haven't learned about their devices, services, etc. There is no sense of ego about their own success, and no sense of failure about what they are not doing. Their model is simply about what they DO with it, not a sense of what it could do, or what they choose not to do, or what they don't know how to do. In other cultures (i.e., USA) there is often a story of potential functionality attached to any purchase in order to rationalize the purchase and to point to future successes as a way of masking any sense of failure for not fully adopting the technology. The advertising messages support this: they don't focus on all the things you can do with the phone, but rather on the necessity to just have one. If you have a phone then you've won the battle; it almost doesn't matter what you do with it.

The manual is used at first to get started, but users find it overly complex (describing it as "too thick") and eventually set it aside once they are able to do some basic functions. They also will play with the phone when they have free time, as well as share with friends who have similar phones or features. Men will invest a bit more time than women in deliberately learning the features of their phone.

Problem solving around the usage of the phone itself is often done in groups, through a series of one-to-one phone calls or email messages, until the problem is solved, and then the solution shared down the chain to all parties. Problems are not solved by going outside to "experts".

Loyalty to phone manufacturer brands (Sony, NEC, Panasonic) is one way that the users deal with the effort of learning how to use the phone. Since the interface remains consistent within manufacturers, there is an incentive to stick with them.

People learn about other services either through word of mouth, or through magazines (Japan is an active magazine culture) with articles about services or *I-mode*. However, there is still minimal awareness of specific services, let alone usage. Despite the press in Japan and elsewhere highlighting the vast number of services that are available, people are mostly making use of email, melodies, and screensavers, with some individuals selecting one service (i.e., surf conditions, restaurant guide) that they may be using. The companies that create and launch I-mode services are not widely known, even though they may be used.

Adoption - Japan

Geoffrey Moore's "chasm model" is an academic American business theory that describes how technology products are adopted. In this model, a tiny segment of lead users invest a great deal of energy, money, and identity into making products work for them, while companies struggle to take the product to the masses. The adoption of *I-mode* in Japan has not followed the chasm model, rather the chasm has been collapsed or skipped, not simply crossed. This technology has been adopted by a huge population, and while still not fully immersed in the technological capabilities, they are very satisfied and changing their lives with it.

This success may be attributed to the existence of bridging technologies such as PHS phones (inexpensive phones with minimal features, and less-than-ideal service coverage), beepers (offering not only paging functionality but also text-based information such as news and weather), and short mail. The familiar platform of the mobile phone enabled new customers to come in without making a substantial change in their activities, while the "killer application" of email provided the new value by solving an unmet need. This mass customer crosses gender and generational boundaries, even though those users may have different applications for the technology.

Kids around the age of 10-12 get a PHS mobile phone from their parents, often so that the parents can contact their kids when they are in "cram school" in the evening. The PHS is not considered a "real" mobile phone. Kids or young teens may also get beepers. Teens will buy their own phone, choosing from the four service providers. Teens and adults will frequently upgrade their phone, getting a new style about once a year.

Email - Japan

Many mobile phone users can send short email messages for free to others on the same network. These messages are known as "short mail" and are available to any mobile phone user, regardless of whether they use *I-mode* or not. *I-mode* (et. al) users who pay a small fee (typically 300 yen per month) can send email messages to others on their system or any others. Typically, there will be a small fee (considered trivial by the users) for each message sent (cheaper than making a phone call), although there are a large variety of billing plans available. In some cases, a customer can pay a small fee per message, up to a certain number of messages, at which point, the charge per message may increase. There may be tiers of message sizes that are billed differently. Overall, there was no feeling of being limited by cost when sending messages – it was seen as practically free.

Depending on the specific plan, the service provider, the choice of character set, and whether the person is sending or receiving the email, the number of characters can range between 250 and 3000 per message. The users are typically sending short messages anyway, and can simply just send another message if they reach the character limit.

In Japan "voice" carries with it an obligation to talk. Email does not have that obligation. Email is also not intrusive, which is another important attribute to the Japanese. Email won't interrupt someone or bother them at an inopportune time.

The content of these brief email messages is rather like a series of one-way messages. "I'm bored" is not followed by "Why are you bored" but rather "I am going to Shibuya today".

Users report that the effort of entering a message (typically done in *romanji*, then converted to *kanji*) using the telephone keypad and one thumb, as well as the limited screen size and limited message length forces their messages to be elegant, simple, and concise. This is consistent with other areas of Japanese culture such as *haiku*, or woodworking, where a highly constrained format or set of tools leads to elegance rather than frustration. Additionally, given the large number of messages that they were sending, they gained sufficient practice to become relatively adept at this manner

of entering text. In fact, there is a Japanese word *oyayubizoku* meaning "thumb gang", for kids who have mastered entering text on the phone and no longer have to look at the phone to "type". Being an *oyayubizoku* is a status symbol.

Even those who have access to PC-based email regard mobile phone email as different. There are some opportunities to link their PC email to the phone email, but this is not of great interest. The messages sent and received on the phone are short, and more immediate. Email on the mobile phone represents a new form of communication that is heavily desired in Japan – an informal and constant communication with friends and family. The PC-based email is used more rarely, for longer correspondence to family members (for example) who reside outside of Japan.

Internet-Japan

Users are exploring new functionality starting from a phone perspective, not a PC perspective or a PDA perspective. Communication, not information, is the focus. Many people do not have a PC at home. If they do, it may not be hooked up to the Internet, and if so, it may be shared among several individuals in the family, often controlled by an "older brother" or other more technologically-savvy person. The size of the PC is such that most bedrooms do not have room for such a device.

When speaking about these technologies, the language people used indicated a range of (mostly not well-formed) mental models about this technology. By "not well-formed" we refer to their internal consistency, not their accuracy. The word "email" is used interchangeably to describe PC-based email and mobile phone-based email, although it primarily refers to the phone, since that is the medium most often used. The Internet is a familiar word but difficult to define - sometimes it is equivalent to the Web while other times it is used to describe how email is sent to others using mobile phones. The words that describe the features of their phones do not describe the Web, or even any kind of "place" (i.e., cyberspace, information superhighway), rather data that their phone has, or that it can access. The data lives in their phone. "Sites" and "services" are also terms that the providers may use but are not consistent with the mental model which is more about the specific usage, such as "melodies" or "looking up restaurants".

As an island culture, in Japan there is a built-in hesitancy (if not total suspicion) about the rest of the world, and the "Internet" is viewed as a global technology, with a built-in barrier (language and character sets). In contrast, *I-mode* is Japanese, scaled appropriately for Japan, designed by a Japanese company to be sold to their own, and in their own language.

Voice Mail - Japan

Voice mail has a cultural fit problem within Japan. Anecdotally, we see that most corporations, hotels, and other places have not adopted voice mail. We suspect that the formality of cue-exchanges in Japanese speech may make speaking into a "void" feel rather awkward. When people speak on the phone in Japan, there is often an ongoing utterance of "Hai" (Japanese for "yes"), almost rhythmic in nature, perhaps making up for the lack of eye contact and physical gestures available in face-to-face. Those utterances overlap the speech of the other person and may provide a form of reassurance. With current voice mail systems, there is no feedback when speaking. Japanese people express concern that their message will be received, perhaps conflating delivery of the message with delivery of the content and meaning of the message.

Phone as a Platform - Japan

The phones themselves represent a fixed platform to which other functionality (communication, information, entertainment, etc.) may be added,

however the device continues to be seen as a phone.

Economic Drivers - Japan

In the old Japan, before the burst of the bubble economy, life was essentially "served on a platter" - people expected to get a good company job and remain there for life. In the new Japan, company jobs for life may no longer be the case, and people have to invent how to run live their lives on their own. All that must happen in an increasingly unstable and unsure world. *I-mode* arrived during a period in Japanese history where the well-established rules of communication and relationships were shifting. Further, *I-mode* is a way to be modern without being Western.

Business Model - Japan

On the supply side, the creation of new *I-mode* sites is often trivial (i.e., a web site that takes 6 weeks to launch can be turned into an *I-mode* site in an afternoon), or free (i.e., posting simple bitmaps of existing characters). Given the huge volume of *I-mode* users (more than 14 million), even if a small percentage of those users make use of a service a small percentage of the time, this may be sufficient to generate some revenue. For the user, the cost is cheap (typically 300 yen per month for a subscription to a service), with some money going directly to DoCoMo (9%) for handling the billing. In this situation all the players (site owner, service provider, end-user) win.

Billing - Japan

The majority of services charge a monthly fee, an inexpensive 100-300 yen per month. They are not charging per use or by quantity of downloaded information (users do not necessarily perceive the interaction as "downloading" especially for melodies and screensavers, they are merely selecting). For that month, users can return as often as they want to make new selections, or access data.

The monthly charge is added to the phone bill. This is extremely convenient, especially given the low cost of each service. For email, there are a variety of plans. A typical plan charges 300 yen for access to full email, as well as a larger fee for a "block" of email messages. Each message still may cost a small amount (less than 100 yen), but only up to a preset level of usage, at which point the cost per message will increase.

Service plans for phone usage vary widely, and are regarded as complex by most users. The plan is not a driver in the purchase process, and is often recommended by friends or the salesperson. An email message is cheaper than a phone call. The wide range of calling plans can be very specific to usage, such as only allowing use during lunch hours and/or after 19:00. Though people were aware of the cost of using their phone, it was typically not an issue of concern for them.

Phone companies such as DoCoMo offer tananka (bonus) points for users based on the amount of their bills and the length of time they have been a customer. These points can be redeemed for replacement phones or for additional phones for other family members. For example, husbands may use these points to give a mobile phone as a gift to their wives. There are also special promotions offering better rates if multiple family members join up. These family plans are very well received, with people explaining that this is a way to support the family, and the provider is well viewed for their contribution to that.

The longer someone is a subscriber, the better rates they will receive.

Perception of Providers - Japan

People have conflicting stories about mobile phone providers (especially DoCoMo) regardless of what service they subscribe to. Stories range from "DoCoMo is the most expensive" to "DoCoMo is the 'only' company." Many companies are described as having the best rates, or being the most innovative. Despite the fact that J-Sky came out with the first color screen, people tell the story that it was DoCoMo.

DoCoMo leverages NTT's history as Japan's first mobile phone company, but can still frame itself as a "start-up." With this story, DoCoMo conveys trust, being Japanese, and leading the way towards needed technological change. One young man chose another provider because by rejecting DoCoMo he was able to "dare to be in the minority." There is little personality attached to most of these brands.

Advertising in Japan is incredibly ubiquitous

Mobile phone providers are no exception, and are in fact responsible for a great deal of the visible advertising. Despite this, people are not able to report any experiences with mobile phone advertising or characterize the brands of those providers. These ads encourage the acquisition of a mobile phone, but do not point to meaningful differences between the brands.

DoCoMo has launched an advertising campaign that uses the slogan "Do you *I-mode*?" There is no information in the ad about phone features, rates, or anything specific, merely the implied exhortation to be part of what everyone obviously must be part of. Like so many other parts of Japanese culture (i.e., the bored but friendly greetings uttered by every shopkeeper), *DoCoMo* is positioning itself as something that is done, because everyone does it.

KEY FINDINGS

Introduction – Mobile phone use in Japan

As described in our ethnographic research summary, and the general business press the mobile phone is a great success in Japan, affecting virtually all markets and age groups. The phone (and the mascot and strap) are an integral part of people's appearance and persona, a central part of personal communication and planning, and a conspicuous part (through storefronts and advertising) of the physical landscape. The mobile phone's current popularity is primarily due to the strong cultural resonance of *I-mode*. Evidence of this resonance can be found in average conversations, reported changes in everyday behavior and extensive lifestyle advertising across all media.

While I-mode is a relatively new Internet-like service, it is not perceived as a new and intimidating "lead user" technology, but a simple "Japan-friendly" messaging and information service. Japan is not a country of "lead users" surfing the Internet (contrary to what is suggested by the Western press), however in the case of I-mode, the Japanese have adopted a new technology very rapidly and in large numbers.

As mentioned earlier most technologies are adopted through what Geoffrey Moore describes as a "chasm" model, whereby new technologies are limited to a few lead users until they can successfully address a compelling cultural need and cross the chasm to become "mass-market" commodities. With I-mode, Japanese mobile services have effectively skipped the chasm and occupy the same consumer space as other trusted commodities (such as cars, watches, and soft drinks). The cultural resonance of I-mode is very powerful and has propelled itself throughout the market in an incredibly short time - less than one year.

Successful I-mode services are those that support casual communication and expression of personal identity. The "killer application" of I-mode is the short message service (SMS), "email"

on the mobile phone. Though outsiders may perceive the content of these short messages as trivial, the messages themselves are extremely valuable to the Japanese as a new informal way to communicate. Other popular I-mode services are those that support personal identity, including selecting new melodies for the ring, new screensavers, characters or images for the phone's LCD screen.

Going to I-mode "websites" to get information is done, but does not have nearly the value as phone email or personalization services. Further, the user's mental model for any of the advanced services is not about using the "Internet" or "surfing the web". Although these services may technically be deployed using the Web, these customers have a different mental model of use. They see the services as a simple extension of existing point to point communication, not a vast uncharted network.

FACTORS AFFECTING MOBILE PHONE ADOPTION

There are many reasons why mobile phones have been adopted differently in Japan than in other countries. We have identified twelve factors affecting the adoption of mobile phones and *I-mode*, categorized as follows:

- **Explicit drivers of success**

  These are the features and attributes of the mobile phone that are most often talked about and connected with personal success:

  1. Communication
  2. Pleasurable vs. Practical Uses
  3. Social Networks

- **Implicit drivers of success**

  These are the features and attributes of the mobile phone that are not directly expressed but are consistently embedded within stories of success (and failure):

  4. Personal Identity
  5. Cultural Identity
  6. Memory

- **Supporting Business Actions**

  The payment strategies, use plans, and loyalty programs that do not, in and of themselves, drive usage but can provide support for satisfying (or undermining) explicit and implicit driver needs:

  7. Cost/Benefit
  8. Advanced Services

- **Supporting Cultural Frames**

  The frames of meaning surrounding institutions, technologies, and individual behaviors that may not actively drive mobile usage, but do indirectly affect it.

  9. Relationship to Technology
  10. Social Ecology
  11. Roles of Receiver and Sender
  12. Change

1. Communication

The compelling cultural need for communication in Japan is being addressed by the short message service provided by *I-mode*. A communication need, unrecognized until the advent of *I-mode*, was the ability to connect with friends on a regular basis but in an informal and non-intrusive manner. *I-mode*'s short message service satisfied this need by offering a way to communicate that is one-way, asynchronous, ubiquitous, and text-based. Additional benefits are that it is low-effort, safe, virtually etiquette-free, and spontaneous. As users experience this kind of communication now through *I-mode* they describe it as unequivocally beneficial, enhancing their social networks and relationships.

2. Pleasurable vs. Practical

Japan offers up many products and services that explicitly support both the practical and the pleasurable simultaneously. This allows for an extensive middle ground of need satisfaction. For Japanese users, the mobile phone supports both business and personal activities by enhancing communication, creating and maintaining all kinds of relationships, and actively participating in the expression of personal public identity.

3. Social Networks

While the general definition and topology of social networks are similar between Japan and many other countries, there is a marked difference in the effort required to acquire, build, and maintain friendships.

In Japan, friends are easy to acquire and easy to maintain. The mobile phone actively participates in both parts of this Japanese equation, and performs many communication functions better than face-to-face. The mobile phone is a vehicle by which the Japanese can make new friends and it is an acceptable way to build friendships. Constantly "checking-in" with friends (by calling or using short messaging) is a very positive way to maintain friendships.

I-mode has continued and expanded upon the desire for daily communication. It improves daily communication by allowing people to connect with friends and family on a regular basis but in an informal and non-intrusive manner.

Text messaging also offers a "buffer zone," allowing people to get close but not too close, which is desirable in Japan. There is a lot of risk in getting too close – if there is a bad relationship with someone, the small size and isolation of Japan as an island nation creates a situation where it is likely that one will interact with that person again. Relationships that are more "shallow" or at a distance are "safer" in this regard. Japanese users wish to experience the sense of being connected or belonging to a community, and the phone-based email give them that sense of community. These emails also allow them to enter individual relationships in a low-risk and low-commitment fashion.

Furthermore, the rapid growth of I-mode is also due to its revelation of an unmet communication need of "perpetual awareness"to simply be aware of other people throughout the day ("samishii"). Constantly "checking-in" with friends by calling or using short messaging have allowed Japanese users to better maintain their friendships. It has specifically helped families stay connected. Traditionally, husbands work late, thereby not allowing a lot of time to connect with family members. Sending messages throughout the day has enabled more connections. Users describe this type of communication as unequivocally beneficial, enhancing their social networks and relationships.

4. Personal Identity

The mobile phone has become a critical accessory in the materialization of personal identity. The selection of the phone, the presentation of a mascot and strap, the display and storage of the phone, the sharing of public space during calls, and the gestural language created around its use all symbolize personal identity, values, and the group with whom the user identifies.

The cultural meaning of the mobile phone has moved beyond that of a "simple tool" or "appliance." It has become a commodity. Since virtually everyone owns a mobile phone and wears it openly, its value has moved beyond pure utility and into the realm of meaning. The style of phone (as well as how it is worn and decorated) is as important a selection criteria as any advanced service or rate plan. These aesthetic

considerations are not perceived as a burden (unlike selecting rate plans in some other countries). Instead, the selection creates an enticing shopping experience that can be shared and discussed with friends.

Even more important is the acceptance of mobile phone usage as a legitimate public activity, which can take place almost anywhere, without the need for apology. Even though the communication content may be private, the act of the call itself is not. The separation of public and private in Japan means that an individual's private sphere is not violated when he or she uses a mobile phone. Onlookers do not feel like "voyeurs," and answering and making mobile calls actively enhances one's public identity and popularity. *I-mode*'s "manner mode", which allows people to speak quietly and have their voice amplified on the other end, further permits public speaking since the user can be more discreet.

5. Cultural Identity

In Japan and many other countries there is a strong sense of what it means to be a member of that culture, and those cultural beliefs contribute heavily to personal goals, attitudes, and behaviors.

As a result of the extended downturn of the Japanese economy (the bubble bursting) and the ineffectual response of government agencies, financial institutions, and private business, the general population has experienced a serious crisis of confidence in Japanese institutions and business. The claims that information technology is the key to their future, coupled with Japan's almost complete lack of involvement in the Internet's explosive growth, has fueled cultural anxiety.

NTT *DoCoMo* and *I-mode* are considered a uniquely Japanese phenomenon and represent an unexpected and much needed reversal of this rather bleak state of affairs. While it is true that most I-mode activity centers on conventional messaging, the advanced services associated with *I-mode* provide users with a safe, unthreatening sense of participating in Japan's information technology future.

While the media, both Japanese and Western, are touting the sophistication of Japan's mobile designs (ultra small size, color display quality, power efficiency, and physical refinement) and *I-mode* services as the "mobile Internet of the future," the average user sees this system as simply a better way to communicate with their friends. Users also feel that the adoption of mobile services is a subtle enabler of "better things to come," from which all Japan will benefit. While this is an inferred effect, personal identity is enhanced with every call, because the more one calls the better off Japan will be.

6. Memory

The mobile phone is used to collect, house, and protect two kinds of memory. The first is the practical memory of numbers, addresses, dates, and stored messages – all supporting the rational needs of everyday communication. The second is the romantic memory of experiences, personal identities, and special people – all supporting the emotional needs of social life. This romantic memory is supported by mascots, images of loved ones in battery compartments, stickers, custom rings assigned to friends, personalized home screens, and stored images and messages.

The phone can be a repository for these precious memories because it is completely trusted and in sync with Japanese culture. While the mobile phone is still a complex product, its functionality and reliability are unquestioned, which allows its emotional functions to come to the fore.

7. Cost/benefit

In order for the needs previously discussed to be comfortably satisfied in Japan, an environmental frame of meaning has been created surrounding the usage of mobile phones. This frame suggests that mobile calls are an unlimited resource that should be used as often as possible to help build the fabric of Japanese culture. Unlimited use is a fundamental good that is encouraged.

In this frame, the role of the service provider is not to make money but to create a social infrastructure, connect users to this infrastructure, tailor services to maximize the benefit users receive, and reward users for their active participation in this system. It is understood that the money paid by users for these services is not making a few institutions rich, but providing the support necessary to keep the entire system (i.e., the culture of Japan) running.

Billing approaches, subscriptions, loyalty programs, points, and family plans are carefully crafted by providers to support this image of user reward, and the selfless support of an unlimited and valuable cultural resource. Advertising never refers to the need to limit mobile usage by focusing on rate plans or ways of reducing service costs. The advertising slogan "Do you I-mode?" presents a cultural imperative, linking I-mode with a natural state of being, and connecting mobile communication with being a well-integrated person.

8. Advanced Services

The advanced services play a minor, but critical, role in supporting the current success of mobile communication. The most used services directly support the practical or emotional needs connected with messaging and voice communication: custom rings, personalized display screens, etc. The other, occasionally used services support social interaction and "killing time," and include locating restaurants, playing games, keeping track of radio play lists, monitoring surf conditions, etc.

While these advanced services are not heavily used, there is enormous satisfaction with the few that are, and a subtle emotional contentment in the knowledge of their availability. The contentment resides in the belief that "I could participate, but I don't have to because any use of the phone or the services available is beneficial."

Since the services are so inexpensive for providers to set up, almost any use becomes profitable, creating a thriving network "micro-cash" environment. Finally, DoCoMo's direct participation in the collection of fees both guarantees the quality of service for users and a painless (and nearly invisible) collection process for providers.

As a result, advanced services can be comfortably "pulled" by users and "pushed" by DoCoMo and its providers. Customers have a relaxed "we'll try anything once" attitude and the service can subs quently be discarded without any sense of personal failure.

9. Relationship to Technology

The Japanese are comfortable with the idea that technology (especially if it is believed to have originated in Japan) can positively affect one's life without taking something meaningful out of it at the same time. The resistance to new technologies from within Japan is very low because there is a general belief that the subsequent changes created by new technologies will not be harmful to Japanese culture.

Japan is not a computer-centric culture (the use of the Internet and e-mail is low and few people own computers at home) so the introduction of *I-mode* was met with few negative comparisons to personal computers. The features of *I-mode* that were most criticized in the West, such as low-bandwidth, small low-resolution text-based screens, and phone keypad text entry, were

perceived as perfectly adequate by most Japanese users.

Single-handed thumb entry of messages on mobile phones is not considered particularly cumbersome given the existing difficulties of entering *kanji* characters or interpreting *romanji* into *kanji* characters on traditional computer keyboards. In fact, skilled single-hand messaging has become a form of status among teens and young adults.

10. Social Ecology

Social ecology refers to a culture's climate and it's sensitivity to variations in "normal" behavior. This includes the forms of feedback it uses to maintain what is normal, and the social rules applied to correct what is considered aberrant.

Within spoken conversation, there are complex, hierarchical rules about how to converse, based on status and context. The Japanese provide and expect lots of verbal feedback during any conversation. Ordinary face-to-face conversation, therefore, requires much effort and attention. I-mode text messaging has skirted all these issues by standing outside the face-to-face rules of hierarchy and context. Therefore, it is culturally safe, protecting both sender and receiver by virtue of its asynchronous nature.

In public, the Japanese are very sensitive to what is not normal, (such as talking loudly on a mobile phone) and seek to maintain normalcy, avoiding open conflict at all costs. This sensitivity has resulted in an "I'm sorry" approach to all social interactions. The Japanese pre-apologize as a matter of course, and can comfortably correct almost any social mistake. This passion for maintaining what is normal and habitually "self-correcting" without conflict has been extended into the features of the mobile products themselves. "Manner mode", for example, is a feature that pre-corrects for the loudness of mobile phone use.

These normalizing strategies, and the phones unique role in communication, have allowed the Japanese to fully integrate mobile phones into the public sphere with almost no disruption of the social ecology.

11. Roles of Sender and Receiver

In constructing rules of communication, cultures naturally privilege some part of the sender/receiver relationship. While context is always a critical factor, the sender/receiver bias appears to play itself out through all forms of communication media: face-to-face, written, electronic, gifting, etc. Any communication medium must obey the implicit sender/receiver rules established by a culture in order to be accepted by that culture.

The Japanese have established a careful balance of status between sender and receiver, and the "face" of each must be maintained at all times. For example, a gift may be given publicly, but it is never opened publicly, thereby allowing a public expression of pleasure upon presentation of the gift, but protecting both parties from potential disappointment when the gift is opened.

I-mode messaging has slotted itself perfectly into this symmetrical sender/receiver relationship, and has removed much of the emotional balancing work required by voice and face-to-face communication.

12. Change

Change in a culture is critically dependent upon how that culture manages and negotiates criticism. Criticism can either impede change or simply modify it.

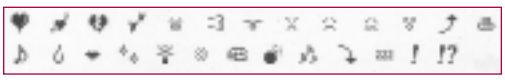
In Japan, change is perceived to be a cyclical, not linear, phenomenon - what is known and trusted now will never be gone forever, but will always

return in one form or another. Change is considered to be part of the nature of things, and is accepted, not feared. This cultural stance posits “new” as good, “old” as good, and “popular” as best.

In Japan, criticism is usually avoided. However, debate that rises out of change is understood to be part of the process. Criticism that emerges from change is used to negotiate a resolution, not to instigate conflict that will halt the change process. For the most part, the group solves problems together and moves on together, without individual recriminations. One can attempt something new without facing personal criticism. Furthermore, if something useful emerges, the group will often adopt it unreservedly. Once a seed of change is planted in Japan, its growth throughout the culture is unbelievably fast and all encompassing. *From the Meiji Restoration* to *I-mode*, this phenomenon is a constant throughout Japanese history.

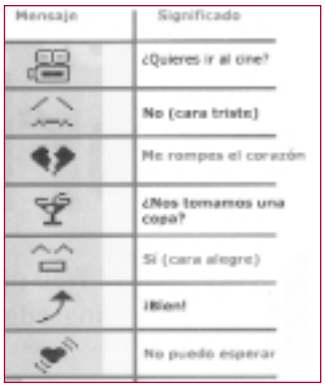
SOME SMS EXAMPLES

Contrary to the rest of the Western countries, which have a fairly common alphabet, the Japanese mostly use ideograms, very similar -as seen below- to the emoticons and smileys. The most popular and better known are shown in the



following figure:

The meaning of some of them are:



SUMMARY

The study of mobile phones and I-mode adoption in Japan can reveal a unique insight into the “domestication” of a new technology. It can be argued that the use of a product will not spread throughout a culture if a sufficiently resonant meaning is not present - “Stuck behind the technology chasm”. “Domestication” occurs if use and meaning are in concert and culturally resonant - “Crossing the chasm”

Through our research it is evident that Japanese mobile phone use and I-mode services are great cultural fits, enormously resonant, satisfying both longstanding and new needs. I-mode has been successful in Japan not because it offers the “Internet” on a mobile phone, but because of its near-perfect fit to a set of communication and cultural needs specific to Japan. In addition I-mode was built on an already strong platform (the mobile phone). In Japan there are seemingly no limits to the products and services that may be attached to the coattails of this communication platform. Operating within the frame of this strong platform, Japanese users are comfortable experimenting with new modes of communication and interactive services.

Is Japan a model for understanding global mobile communication and wireless Internet adoption? Yes and No.

In general terms - Yes. Japan's strong mobile platform provides keys to understanding how the domestication of new services (like I-mode) can support and enhance existing communication needs, and identity desires (successful I-mode services are not just technical novelties)

In cultural terms - No. Japan's I-mode usage invites inappropriate Western comparison. Japan's connections to the mobile phone, its casual acceptance of technological changes, and its specific communication needs are very different than most Western cultures. Despite high usage, many aspects of mobile phone use are still resisted in the West. Cultural barriers to a completely uninhibited use of mobile phones may present unique limits as to what services and functions may be successfully added to the current platform. It would be ill advised to simply transplant I-mode services into a Western venue. New mobile services must have their own well-established meanings and values, or will be rejected as frivolous novelties that do not support fundamental Western communication needs.

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SUBJECT

BUDDYSYNC: THINKING BEYOND CELL PHONES TO CREATE A THIRD-GENERATION WIRELESS APPLICATION FOR U.S. TEENAGERS

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In the first part of the article certain structural factors that have affected the way that North American teenagers have adopted the mobile phones are reviewed. Especially, among those factors, are those that have to do con with the compatibility of the network and the tariffication system, which have influenced the way these youngsters perceive the value and the accessibility to the mobile phones and their specific services, such as the SMS messagerie.

In the second part, a deeper analysis is made as to the cultural factors that affect the habits of the mobile communication and the wishes of the North American teenagers regarding communication. Finally, in the third part, a presentation is given in regards to the BuddySync experiment about a newmobile interface designed specifically for young people.

Key words: Mobile phone, GSM, SMS, Text messaging, Information and communication technologies (ICTs), Information society, youth, socialisation, communication, primary group, role.

Introduction

Why have US teens been slower to adopt cell phones than their European and Japanese peers?.

We explore both larger, macro issues that structure the choices available to US youths, as well as the beliefs, values, and norms that shape their culture of interaction. While we recognize that structural and cultural factors are intertwined, we argue that the media has tended to portray cultural factors as byproducts of economic and infrastructural conditions. An example of this is the argument that US teens used to prefer pagers because cell phones were too expensive.

Such arguments did not consider the value of pagers in satisfying teen desires to be connected but also limit accessibility. What we will demonstrate through this chapter is that there are deeper values that guide teen wireless use, and that these need to be uncovered if appropriate solutions are to be reached.

In part one of this chapter, we examine the structural factors that have affected US teen adoption of cell phones. In particular, we look at issues regarding network compatibility and pricing, which have influenced the way US teens perceive the value and accessibility of cell phones and specific services, such as mobile messaging. While these factors have to a large extent affected US teen conceptions of mobile communication, we also explore how these structural issues are being addressed by US companies, who seek to create some of the macro-conditions that have made cell phone use

so common among Japanese and European teens.

In part two, we turn to a deeper examination of the cultural issues that affect the mobile communication habits and desires of US teens. Here, we draw upon ethnographic research that the authors conducted with *Ericsson Cyberlab* in Singapore. The project, called *BuddySync*, sought to uncover the cultural issues regarding wireless adoption among U.S. teens. While the study was not specifically about cell phone use, the findings suggested solutions that were uniquely different from the prevalent professional cell phone paradigm. In fact, the teenagers expressed particular communication and connection values that their cell phones and pagers could only partially fulfill. Several key themes emerged that characterize their culture of interaction. First, participants expressed that the benefits of wireless devices was primarily for privacy and not for mobility (the traditional design rationale behind mobile phones). In fact, most respondents imagined themselves using their devices at home, in their own rooms.

Second, US teens have, until recently, viewed cell phones as professional tools. Third, desktop Internet access continues to affect how US teens view messaging. Fourth, interacting within groups was the predominant form of communication for most teens. While the phone was preferred for its speed and instant connections, it was cumbersome for groups because one has to connect individual by individual. E-mailing groups was considered too slow and lacking in immediate feedback. Fifth, the teens expressed that cell phones represented being controlled (e.g. by parents, boss) or being on duty. They wanted a means to be able to control who contacted them at certain times, without having to turn the device off. Sixth, the teens consciously and dramatically vary their communication styles depending on the recipient and social context of their communication. For some groups they preferred phone calling, whereas for others, short messaging.

In part three, we explore the design of the *BuddySync* mobile communication concept. The *BuddySync* research suggests that existing mobile communication products and interfaces do not adequately support the social interaction and communication behaviors of U.S. teens. Rather, an alternative approach to the current mobile phone model, which was originally targeted at business professionals, is needed. We explore the research and resulting design for *BuddySync*, a project to create a new interactive experience based on the way teens see the world around them. Rather than reflect office software metaphors such as documents, folders, and tasks, *BuddySync's* organization is people and group-centric. At the core is a teen's closest friends, represented on the main screen so that teens can quickly update and show each other their moods and contact preferences (e.g. phone, note, all, or keep out). Such a design allows teens the balance between control and expression that characterize their concerns about communication.

Regarding types of communication, this paper explores the significance of scribbled notes and shared notes[1] as an alternative to standard SMS. Buddies can talk or, when they need more privacy, exchange short handwritten notes or scribble notes together in a shared space and in real time. They can distribute handwritten notes to pre-defined groups (e.g. Skaters or Cheerleaders), keep in touch with acquaintances, and speed dial parents for brief, but necessary check-ins.

[1] "Scribbled notes" are handwritten texts, written with a special pénsil, on the screen of the electronic devices, such as those used in present-day notebooks (PDA's). "Shared notes", however, are a specific BuddySync application, where many users can simultaneously write on their electronic devices and see what the others write, all of this in real time. It is, then, somehow like sharing a sheet of paper. (T's N.).

PART ONE: STRUCTURAL FACTORS AFFECTING US TEEN ADOPTION OF MOBILE COMMUNICATION DEVICES

According to *Teenage Research Unlimited*, a Chicago based teen market research firm, there are about 31 million young people between the ages of 12 and 19 in United States. By 2010, that number is expected to jump to 34 million. Known as Generation Y, it's a huge demographic group that some says rivals the "Baby Boomers". In addition, marketers have also noted the expansion of so-called "tweens" in recent years.

Tweens are defined as children aged 8-14.

There are now 27 million of them in the U.S., the largest number in this age group in two decades. They are highly impressionable consumers, who believe that having the right "stuff" is the quickest route to acceptance (Kantrowitz and Wingert 1999: 64).

Teen Americans are an attractive target segment because they have grown up using computers and other technologies, and have come of age in prosperous 1990's. Thus, they tend to have more disposable income than past generations. In addition to working part time jobs, younger and younger kids are getting paid for preparing meals, cleaning the house, mowing the lawn, baby sitting, and helping their parents out with computer work.

Given the attractiveness of this market, analysts have looked to the rest of the world in pondering the potential for an explosion of cell phone use among U.S. teens. In both Europe and Japan, teens lead the rest of the population in cell phone use. Overall subscriber penetration in Germany is 29 percent, while penetration among teens is 40%. Wireless carriers in Finland claim that almost 90 percent of children between the ages of 13 and 18 own cellular phones. In Japan, NTT DoCoMo says that over 70 percent of its i-mode revenues are received from users in their teens and early 20s. According to the *Japanese Management and Coordination* Agency, 59 percent of Japanese high-school juniors have cell phones and spend up to $175 a month for service. According to the agency, two-thirds of Japanese teens who don't already own a mobile phone say they want one (Bruzzese 2001).

In the U.S., by comparison, only 25% of those aged 10-19 use a cell phone. The question is, why have US teens—generally considered to be trendsetters—been slower to adopt cell phones than their peers abroad? Companies are asking how they can successfully tune into the teen market, as Nokia and NTTDoCoMo have done in Europe and Asia, particularly as market research firms predict that by 2005, two-thirds of US teens will be wireless (Bruzzese 2001).

This section explores two main macro-factors that have affected teen perceptions of cell phones in the US: infrastructure and pricing.

Infrastructure

The foremost issue to consider in the development of the wireless market for teens is the lack of interoperability between the various service standards in the US. There are three main operating systems in the US: GSM, TDMA, and CDMA. This entails a more time-consuming development for providers, who must tailor their delivery methods to each carrier's standards. Because the mobile phone industry has concentrated on selling phones to high level professionals, coverage outside main cities is patchy. Furthermore, a variety of regional semi-monopolies exist in the US, preventing the pricing wars that have brought cheap mobiles to the British, for example[2].

In Europe and Japan, GSM has become the dominant standard[3], and where services can be

[2] And to all European countries (Editor's Note).

[3] Not only the dominant standard, but the only standard, and it was first designed, developed and marketed in Europe (Editor's Note).

used more consistently across standards. Analysts argue that mobile messaging services will not grow as quickly in the US as SMS (Short Messaging Service) has in Europe and Japan, mainly because the mobile messaging standard has not been defined in the US as it has been elsewhere. In Europe, SMS is part of the GSM standard. Thus, all subscribers to GSM services automatically receive SMS offerings, not as an expensive option, but as an inexpensive bonus service to voice calling.

In terms of Japan's "always on" I-mode services, users are billed by the amount of data they send, and not by amount of time they are connected to the service. Subscribers pay in order to send SMS, download cartoons, ringtones, and other forms of entertainment onto their cell phones—each usually just a few cents. As teenagers spend hours engaging in such practices, the carriers, portals, application service providers (ASPs), and content providers all make money.

In Europe, as well as in Japan, customers pay high per-minute rates for wireless calls, and thus SMS is considered a cheaper way to communicate.

In contrast, the U.S. wireless market consists of a series of networks that are based on varying technologies. While the uniform standards in Europe and Japan allow SMS users to send messages to people who have wireless service through any wireless carrier, in the United States, mobile users can send text messages only to people who have service through compatible carriers. Furthermore, in the U.S. less than 15 percent of wireless handsets are SMS-capable, compared to the U.K. where almost all phones can handle SMS[4].

In addition, the cost of making a wireless call in the US is usually less expensive than mobile messaging. While their European and Japanese teen peers see it as a cheaper way of keeping in touch than via mobile voice, US teens have, in addition to voice calling, had other wireless messaging alternatives to SMS. These include PC email, email on PDAs, and two-way paging devices. Because of its relatively higher price, the lack of a standard across all carriers, and the availability of other text-based options, mobile messaging, such as SMS, is not considered a standard among US teens, but is seen as an extra service.

Nonetheless, US carriers have focused more effort within the last year to develop interest in mobile messaging among two distinct demographics—teens and *road warriors*. Despite the slow uptake in terms of teen interest, analysts are optimistic about what they see as a latent demand for mobile messaging. *AT&T Wireless*, which launched its SMS offering in late October 2000, counted 700,000 SMS subscribers in the first 10 weeks that the service was available.

Currently, about 1 million mobile-originated SMS messages are sent per day on just the *AT&T Wireless network* (reference). SMS usage rose from 8% to 12% among Internet-enabled phone users. The numbers of those who "intend-to-use" SMS in the future look even brighter, with an additional 30% of Internet-enabled phone owners in the U.S. saying they are likely to use this method of communication (Hartner 2001)).

Indeed, the numbers of messaging-compatible phones being sold in the U.S. is rising significantly. Carriers are starting to allocate more advertising dollars to mobile messaging -money that in the past was reserved for pushing their wireless Internet offerings. In addition, wireless carriers are purchasing more SMS-capable phones than ever before to distribute to their customers. "By the end of the year, every new phone that we sell in our stores will be two-.4 way-messaging [SMS]-compatible," says Janna Ducich, *AT&T Wireless's senior product marketing manager* for SMS.

[4] Again, it should be added that this is the case for all European countries (Editor's Note).

Analysts hope that increased mobile messaging usage will lure people into using their mobiles more, and for non-voice communication purposes. As email eased people into computer use, SMS may create the incentives for people to become more comfortable with using their mobiles in new and creative ways.

Pricing Structures

The economic issues shaping wireless usage among teens abroad have been very different from those shaping the US, as mobile phone device and services prices had, until recently deterred US teens from embracing cell phone mania. In the US, having multiple landlines in the home is a common and relatively inexpensive option. It is not uncommon for US teens to have a private line in their room, or for their homes to have a second line somewhere. Mobile devices were simply not "must haves" for American teens as they are for their Asian and European peers.

In Europe, the price of landline services is not significantly cheaper than wireless services, making wireless more of a viable landline replacement than it is in the US. In Japan, landlines are significantly more expensive than mobile plans, and in developing countries such as China, the wait to get one turned on may be months. As was explored in the previous section, SMS is considered a cheaper alternative to mobile voice calling in both Europe and Japan.

The adoption of cell phones among teens in Europe and Asia has, to a certain extent, been driven by the prepaid pricing model. Within this model, wireless companies have created prepaid programs, allowing users to buy blocks of call time in advance. Thus, there are no monthly bills, no contracts, and no credit requirements. However, the adoption of pre-paid plans has been slow in the US, due to the convention of buying airtime on credit. Wireless companies have also, in the past, avoided aggressively promoting prepaid options. Prepaid customers tend to draw lower revenue and have higher turnover than regular wireless users. Nonetheless, analysts believe that teen-agers and young adults are an untapped market for prepaid cellular service in the US—as they have been in Europe and Japan. Because they don't have credit, teen-agers need a parent to sign up for wireless service today. With prepaid products, they can buy a phone on their own and refill minutes as they're used.

In October, *Sprint PCS* said it would form a joint venture with the *Virgin Group* to target 15- to 30-year-old users for prepaid wireless services.

Other carriers have already jumped into the market with new packages. Last year *AT&T Wireless* launched its *Free2Go* product, a stand-alone starter kit for under $100 with a new phone and prepaid cards. In August, *Verizon Wireless* began its *FreeUp* program, specifically targeting the youth market (Reddy 2001).

If US teens are buying prepaid phones, they will, like their European and Japanese counterparts, need places to refill minutes. In Europe, for example, teens can go to places such as cafes, bookstores, and vending machines to replenish. US carriers have begun to sell prepaid products at gas stations and convenience stores, such as 7-Eleven. With increased marketing of prepaid programs, the number of prepaid users should grow to about 25 percent of the wireless market by 2005, said Entner of the *Yankee Group*. Estimates today put the number at 10 percent to 15 percent(Reddy 2001).

Airtime pricing models in the United States have tended to be on the model of large buckets of minutes for one monthly rate. This may be too expensive for teens to pay on their own.

Parents are increasingly opting for family plans—minutes that are shared between family members when talking to each other. However, US teens do not want to spend the majority of their phone time with family members. Thus while the family

packages have been appealing for parents, they have not created more excitement among teens to use mobile phones.
Some analysts argue that wireless companies should focus on developing opportunities for people to use their phones to make micro payments--$1 for a ringtone, or a Coke. The current focus, on spending more money to buy a book or a concert ticket, has not excited the teen market.
Here, they point to lessons learned in Japan, where teens spend hours downloading ringtones and cartoons for a mere few cents each.
Yet these activities have added up, as downloading new applications for their phones has become a national pastime in Japan. These micro-payments may allow US users to become more comfortable in using their cell phones as electronic wallets.

PART TWO: THE CULTURE OF US TEEN MOBILE COMMUNICATION PART TWO: THE CULTURE OF US TEEN MOBILE COMMUNICATION

At the end of 2001, however, analysts concede that American companies are not yet entirely sure of what will boost cell phone use figures in the U.S. to the highs in Europe and Japan.
While market researchers keep emphasizing how "hot" the US teen market is for wireless products and services, research has indicated that American teens are, nonetheless critical of the growth of wireless.
As we explored in this section, some of that skepticism is the byproduct of macro factors, such as the lack of a network standard in the US, and the business models that continue to drive pricing plans and device designs.
Beyond these structural limitations, are there unique ways in which US teens communicate in mobile contexts that should inform how wireless products are developed?.

In this section, we move beyond structural analyses and look to the teenagers themselves, in order to understand their culture of mobile communication.
We draw on the ethnographic research findings from the *BuddySync* project, which was conducted between 1999 and 2001 by the authors and *Ericsson Cyberlab* in Singapore.
The research goal of this project was to explore the culture of young, mobile, independent, and socially active U.S. teenagers. A team of interaction designers and anthropologists conducted ethnographic research to define the characteristics of how teenagers' communicate with one another and to uncover their preconceptions of existing wireless communication devices.
Additional research conducted throughout the program included one-on-one interviews to gain more detailed insights into teenagers' communication habits, evaluations of "Wizard of Oz" demos, and the use of construction sets[5] for determining preferred hardware configurations and trade-offs. In total, 30 different teenagers from the San Francisco Bay Area were included in 200 hours of research.
The respondents were 14 to 19 years old, both boys and girls, experienced using a variety of pagers and cell phones, from urban and suburban environments, and varied in their use of private and public transportation.
Research by the authors and *Ericsson Cyberlab* Singapore suggests that existing mobile communication products and interfaces do not adequately support the social interaction and communication behaviors of U.S. teens. Rather, an alternative approach to the current mobile phone model, which was originally targeted at business professionals, is needed. This section will explore the following findings:

[5] The authors are referring to the constructive elements, the building blocks that are used in the BuddySync pilot research project, so that youngsters may build up their one telephone devices (Editor's Note).

- Privacy more salient than mobility for US teens
- PC Internet vs. mobile Internet models
- Cell phones have been perceived as primarily for professionals
- Group communication
- Control over communication
- Different types of communication with different groups of people.6

Privacy vs. mobility

The majority of the research participants stated that the benefits of a wireless communication device (phone or pager) was primarily for privacy and not for mobility (the traditional design rationale behind mobile phones). One typical response to the concept demonstrates this strong desire for privacy. "When I am home I have to share my computer, but this [a mobile device] is something that could be mine." In addition, many of the respondents' parents restrict use of the shared family telephone or create uncomfortable situations by answering teenagers' calls. It was common for friends to page one another even when they knew both parties were home. This allowed them to alert one another privately and to answer the telephone before their parents.
While privacy was very important, the respondent teenagers felt mobility was less important. These teenagers tended to have very set schedules that involved moving quickly from one place to another. The scheduling of the educational system is a major factor. In the US, teens attend school generally from 8 a.m. to 3 p.m. In Asian countries such as Japan, Taiwan, and Hong Kong, however, high school kids commonly take after-school cram courses to prepare them for college. They thus are away from home for longer periods of time than their US peers, and have less leisure time. These two factors have led to a high rate of mobile phone use to facilitate entertainment and communication while mobile.
An analysis of possible use scenarios created by the respondents indicated that they were not frequently mobile. Most of the scenarios involved the use of the device in their own rooms at home, talking to friends who were probably in their own rooms. And, although they did want to carry the device with them in their backpacks, few of the use scenarios include using the device while *in transit*.

PC Internet vs. Mobile Internet Models

The *BuddySync* research findings strongly indicated that American teens are, to a greater degree than their European and Japanese counterparts, accustomed to accessing the Internet over PC's. Their model for Internet accessed information is highly visual and content rich. US teens tend to see wireless web access as an inferior version of their dominant, PC-based model of information access and messaging. Furthermore, in having an Internet centric model, US users in general are used to retrieving material from an intermediary, such as Yahoo. They expect wireless data to be similarly trans-coded from the web, which is much more inefficient than a pure mobile experience. In contrast, for Japanese teens, *I-mode* is their primary way of interacting with the Internet, and thus their expectations of what should be available wireless are different.
Differences in the PC Internet vs. mobile Internet models also explain the slower adoption rate for mobile messaging among US teens. In the US, messaging was first introduced through conventional desktop computing. The AOL model of e-mailing and instant messaging has largely defined teen expectations regarding text communication. During our first round of *BuddySync* interviews, we found that teens automatically compared wireless messaging with

what they could do on AOL. US companies try to develop mobile messaging based on this model. Japanese consumers would rather send messages via their compact, fashionable cell phones than via desktop PCs.
Language is also an important variable in assessing wireless communication adoption. A single Japanese character can express a complete concept, making it more efficient on a small screen. US teens may struggle with inputting longer messages, or will, as they have done with pagers, develop an abbreviated language unique to SMS. Having to type in extraneous letters or numbers on the handset may deter users.
The *BuddySync* research suggested, however, that teens may not necessarily be averse to more complex text inputting. They do not have the same time and concentration constraints that structure professional use models. Our research suggests that being "experts" in inputting text with their thumbs may be a form of prestige building or status, showing that one has mastered a particularly difficult activity.

Professional vs. teen-oriented image

In the US, cellular service and mobile phones have largely been viewed as costly and primarily for wealthy individuals and business travelers. Wireless analysts commonly argue that US companies need to shift their focus from older, time-constrained, largely utilitarian mobile users to younger ones who are more open to experimentation.
Teens have, until recently, perceived mobiles as tools for senior businesspeople, and not fashion items. This is due to how mobiles have been marketed—black bricks devoid of customization. The teens that we interviewed in 1999, during the first research phase, commonly said that cell phones reminded them of their parents. This held negative connotations, in that their parents were busy people and often "controlled" by their bosses or coworkers through the cell phones.
The *BuddySync* interviews we conducted in 2000 revealed that the association between cell phones and working parents had already become less pronounced. While they still associated cell phones with professional parents, teens were to a greater extent using mobile handsets themselves, and perceiving them as important if not indispensable devices in their daily lives.
As symbols of status or identity in general, cell phones can play critical roles in teens' quest for acceptance, which becomes especially intense in early adolescence as teens become very self centered and spend a lot of time thinking about what others think of them. Dressing a certain way is both a sign of uniqueness as well as a way of defining membership in a group. What defines "teen" culture is, however, more complex in the US than in smaller European countries and in Japan, due to the more varied demographics. Styles range from the *all-American/ Tommy Hilfiger* to *hip-hop*[6] to *extreme-sports* to *alternative styles*. There is no one dominant teen style with which wireless companies can capture the entire market. The first successful attempts to appeal directly to US teen tastes and desires have largely been in the realm of hardware. Nokia, in particular, has been immensely successful by letting fashion-conscious teens create custom faceplates for its 5100 series phones. The *BuddySync* research strongly confirmed, however, that such relatively superficial appearance changes are only the beginning of the process of developing from a professional centric to a teen-centric perspective. Teens were not only interested in what their wireless devices looked like, but more importantly,

[6] The "all American/Tommy Hilfiger" is a typical U.S. high fashion style, and the "hip-hop" is a musical style there, very much influenced by the African culture. It is also referred to a high fastion style (Editor's Note).

were concerned about how these devices could enrich their lives. Thus, the 'cool' factor wasn't just about physical styles, but also about the activities that the devices allowed them to engage in.
Companies have begun to think beyond exteriors, however, and are developing applications that are teen-specific as well.
There were few teen-specific service and application options available when we were conducting the *BuddySync* research. Since then, companies have announced several teen-targeted initiatives. Sprint PCS announced the addition of *Connexus*' *CD service, , which lets kids purchase music they hear on the radio using their cell phones; allowance-based gaming and instant-messaging (IM) services; and a partnership with teen-content provider *Katrillion*.
AT&T Wireless has also partnered with *Katrillion* and has added *Surf Lounge* -- more than 60 youth-focused Web sites from *MTV.com*, *Britannica.com*, *Sweet16.com*, and others -- to its *Digital PocketNet* service. *Motorola* has backed *Talking Drum*'s *Kode* phone, which offers voice recognition for calling up buddy lists and phone numbers. *Samsung*'s *Uproar* cell phone can also be used as an MP3 player.
In June, 2001, *Cingular Wireless* became the first U.S. carrier to offer customized ringtones for *Nokia* and *Motorola* phones and in July, *AT&T Wireless* began offering a catalog of 500 tones.
through a partnership with *Sonera Zed*. In both Europe and Japan, cell phone users commonly assign different ringtones to different callers, creating an auditory caller ID system. But ringtones serve more than a pragmatic use—they have become a cultural fad, most popular with the 14-26 year old crowd.
Ringtones have become a way for teens to express their individuality, or their association with particular musical styles or bands. For both Cingular and AT&T, subscribers can typically order ringtones from the carrier's Web site for about a dollar a piece, and have them delivered via text messaging. Both carriers offer a variety of tunes from movie and cartoon themes to jazz and alternative rock.
But the majority of both carriers' offerings are pop music hits from the 1980s and '90s. U.S. ringtone providers face a more challenging environment than their European counterparts, however. It is difficult to persuade publishing companies to release song rights in the US.
Also, it is still unclear as to whether US customers will flock to ringtones, as their European and Japanese counterparts have done.
The majority of efforts have been in pushing superficial appearance changes or specific applications, like SMS or ringtone customization, which have been successful among teens overseas. Beyond these, there are also efforts to create unique, integrated device and application concepts that are teen-specific. *Gitwit* has developed a teen-focused, proprietary handset with a unique curved shape. The device includes a "smart skin," similar in technology to the chip in a smart card. The chip automatically draws related content from Web sites over the carrier's network, such as games, ringtones, or voicemail announcements in a celebrity's voice. The skin itself can carry logos, graphics, and photos, letting teens instantly identify the outside of their phones. Both the content and the look can say, "I'm a Britney Spears fan", or "I'm a skater." Thus, the chip changes the phone's content setup as well as appearance, to suit the personal tastes of the teen. When the user tires of one style, he/she can buy another skin, and thus personalize it differently. The skins, which will sell for $20 to $40 dollars, become the CD's of the wireless world —a stream of revenue once the device is purchased (Newman 2001).
The *BuddySync* project preceded most of these teen-specific initiatives, but strongly suggested that US teens needed to be able to customize their

wireless devices in ways that revealed what groups they belonged to and whether these groups were sports, academic, music, or hobby based. In the next section, we discuss the agency teens wanted to have in defining both individual and group identity through their wireless devices.

Emphasis on Group Communication Emphasis on Group Communication

US teens today report that they feel overwhelmed by pressures and responsibilities—half have lived through their parents' divorces, and 63% live in households where both parents work outside of the home. Of all the issues that trouble adolescents, loneliness ranks at top of list. Teenagers may claim they want privacy, but also crave and need attention. Loneliness creates an emotional vacuum that is filled by an intense peer culture (Kantrowitz and Wingert 1999).
What we found during the BuddySync research was that Interaction within groups was the predominant form of communication for most teen respondents. The most frequent and important group is the peer group of 3 to 8 best friends who frequently plan activities, share knowledge, gossip, and work together. Further discussion of how devices support this type of communication revealed two interesting points.
First, while the phone was preferred for its speed and instant connections, it was cumbersome for groups because one has to connect individual by individual. Second, the capability of email to send and reply to groups was valuable, but it was considered too slow and lacking in immediate feedback required for typical teenager group communication. Current products and services to support teens' group communications are at best a trade-off between immediacy and distribution.
Subsequent evaluation research confirmed this strong need for instant group communication.
The shared note, group note, and conference calling features of the prototype were easily understood and highly valued by the teenagers. One respondent said it would be "good for getting messages out there really quick. I'd do it a lot to organize people."

Importance of Retaining Control of Communications

The respondents were surprisingly critical of owning and carrying a cell phone. They expressed that cell phones stand for being controlled (e.g. by parents, boss) or being on duty. This feeling was reinforced by the intrusions of cell phones into parents' lives.
Others mentioned that it is common for teenagers who get cell phones from their parents to hide them in their bags and mute them to prevent others from recognizing them.
The fear of losing control was especially acute for teenagers. They seek to assert control and gain responsibility over many aspects of their lives.
The pager appears to possess an interface that fits teenagers and does not raise the same concerns of losing control with their pagers.
They expressed that pagers make them aware of a person's desire for contact and affords them the control to call, ignore the page, or call later.
Exercising choice, control, and responsibility is crucial in teenagers' communication.
Subsequent evaluation research verified the value of features in the prototype that conveyed a sense of control to the users. The respondents anticipated regularly using the options that made others aware of how they wanted to be contacts.
Having a "keep out" option was seen as more direct and honest than simply turning off a mobile phone: "Keep out is good. People will know you don't want to be contacted, rather than [assuming you've] just forgotten to turn on [your] pager/cell again."

Strong Differences in Types of Communication with Different Groups of People

In each stage of the research the respondents recalled many different communication scenarios in many different settings. It became apparent throughout that teenagers (probably more that adults) consciously and dramatically vary their communication style depending on the recipient and social context of the communication. Analysis of the respondent's scenarios resulted in the following four general communication typologies described on the next page:

A. Close Friend Group Communication

Focus	Privacy, sharing, personal interaction
Size	2-8
Structure	1 to 3 individuals in the Close Friend Group are "best friends". Ages 12 to 16 prefer same gender groups. At ages 16-17 the group gets increasingly mixed in gender and less tightly knit.
Time	Late afternoons, evenings, and weekends.
Location	A small number of consistent locations including: home, friends' homes, mall, movie theater, or other activity centers. Communication within Close Friend Groups most often occurs in school..
Mobility	Short rides from parents or with friends.
Activities	Close Friend Groups spend time together watching TV, skateboarding, biking, and going to movies. Close Friend Groups of younger teenagers are focused on school activities, while older groups (16+) are more focused on interests.
Comm. Style	Typical exchanges include short messages to plan activities and homework. Long communications include calls and emails for sharing stories, emotions, and dreams.
Medium	Close Friend Groups always prefer the most private medium available.
Development	The importance of Close Friend Group communication decreases as teenagers begin having boy/girlfriends.

B. School Friend Group Communication

Focus	Groups, self-identity, restriction, secrecy
Size	Cliques of 10-30 individuals
Structure	Group formation driven by teens' search for identity. Groups are created around activities or style. School Friend Group members are unknown to parents..
Time	During school.
Location	Classroom or school break areas
Activities	Meetings around school and activity schedules.
Comm style	Secret messages in class, or large semi-chaotic exchanges between large groups .
Medium	Notes or face-to-face.
Development	Highly segmented by gender, until older.

C. Job Contact Group Communication

Focus	Duty, being controlled, making money.
Structure	Separated from all other groups and activities; Close Friend Groups can interfere with job.
Time	Afternoons, evenings, and weekends. Often compete with Close Friend Group communication for time.
Mobility	Mobility combined with full accessibility becomes important part of job responsibilities.
Activities	Specific to job function. Usually isolated from activities with other groups.
Medium	Specific to job and usually controlled by job manager.
Development	Money from jobs plays important role in teenagers' establishing their independence.

D. Parents Group Communication:

Focus	Transportation, security, scheduling, and the development of trust and responsibility
Structure	Varies by proximity t o friend and services and by the use of public transportation. Teenagers who are dependent on parents for transportation are less independent. Most parents and teenagers accept roles as part of their family's social structure.
Time	Early mornings, evenings, and weekends.
Activities	Interaction with parents is focused on homework, school obligations, purchasing things, and transportation. Parents are the schedulers for teenagers under 16. At this age purchases are granted individually to assure involvement. Older teenagers (16+) earn and spend their own money with different parental involvement.
Comm. style	Security check-ins, scheduling, short check-in messages.
Medium	Phone, face-to-face, email, and family calendar. Family shares PC, phone, and answering machine without problems.
Development	Checking-in serves an important social role in building trust and responsibility..

PART THREE: THE BUDDYSYNC DESIGN CONCEPT

PART THREE: THE BUDDYSYNC DESIGN CONCEPT

This mobile application concept was created by Ericsson Cyberlab Singapore and the paper's authors to focus solely on supporting the social interaction and communication behaviors of teenagers. It is intended to be a third-generation wireless application that supports teens and their conversations, activity planning, awareness of friends, and need for fun.

Figure 1 shows the main screen of the interface. The facial representations are the primary interface element for initiating communications through handwritten notes, shared notes, or phone calls. By having friends control their facial expressions, the teenaged user is provided with an at-a-glance and continually updated status of his closest

Figure 1

friends. The packet-based nature of 3G networks (i.e. the end terminals are always on-line) makes this feature technically possible. To initiate a note, call, or shared-note session, the user first selects a friend by tapping on her face and then selects the preferred communication method. This reverses the more common interaction approach in which applications or documents are selected first, followed by the selection of recipients. Office software metaphors such as documents, folders, and tasks, need to be questioned and replaced by themes that fit into teenagers' lives. Putting the peer group at the center of all interactions is a simple yet important distinction that reinforces the teen-centric interaction model behind the interface.

Design Implications:

Based on the research findings, it was evident that a solution for teenagers needs to emphasize the most private and common communication between teens and their close friends. It was also evident that the application should accommodate the other types of communication, but clearly separate them from communication with close friends. This segmented approach created a model of interaction that was instantaneous, highly directed, and private.

This model differs from other communications applications such as email, address directories, and cellular telephones on several counts. These

differences are articulated in three design principles:

1. Communications within a group take on a greater or equal priority to communication between individuals.
2. Communications are immediate and original. There are no representations of communications in lists or in-boxes, or as documents or icons. Communications simply appear in their original form and disappear after they are read.
3. There are permanent connections to peer groups. Members of peer groups and potential recipients have a physical, real-time representation in the application that allows teenagers to feel permanently surrounded by their friends.

The following describe the key elements of the functional prototype that was created based these principles:

General UI Structure:

The organization of the UI follows the organization of people within the teenagers' world. The main sections are Buddies, Groups, Visitors, Myself and Parents.

Proxies:

The default and idle screen is the Buddies screen (Figure 2), which displays proxies of the best friends, their moods, contact preferences, and personal comments. This design approach is closely related to existing work on social awareness and proxies by Erickson et al. (1999). Specific to this approach is the emphasis on representing the emotional status of each close friend. Each person can choose his or her own face and the faces can be easily changed to reflect a change in mood. These mood representations provide the user with information on how a friend is feeling before calling or writing them a note. Knowing this and being able to anticipate what kind of response they might receive was very important to the teenaged respondents.

Figure 2

Along with the mood, users can broadcast their contact preferences. By selecting from All, Phone, Note, or Keep Out icons teenagers can have control how accessible they are to others. Though they indicate preferences, these icons do not block incoming communications. Teenagers did not want to be cut off from their friends even when they were in bad moods. Ultimately, friends must balance the importance of the contact against the temperament of the user. When choosing a mood representation and contact preference the user may also write in his or her name and a comment (Figure 3). The research found that teenagers frequently have nicknames and pager names, both of which they can change regularly. What the user wants to call herself is as important as conveying moods. While the primary interface was created to provide status and access to a teenager's close friends, access to other groups and functions are clearly

Figure 3

separated (i.e. work from leisure and friends from parents). Real-time proxies do not represent visitors and their emotions.
One popular feature with teenaged respondents was the ability to promote visitors to buddies and to demote a buddy to a visitor.

Group and Shared Functions:

The strong emphasis on group communication is reflected in the shared note feature. The shared note feature is an informal and spontaneous implementation of a shared workspace along the lines of the existing shared board concept of Ishii and Kobayashi (1992).
The interaction is similar to a phone call, yet it can be used in quiet environments where a call is inappropriate. The shared note works by displaying the same workspace and contents for all users simultaneously. Two or more people can play games, such as hangman and tic-tac-toe (Figure 4). Because the shared note can be opened and used over long periods of time, it provides a forum

Figure 4

for group decisions such as determining movie to see. In evaluation research the shared note was seen as superior to email for its ability to connect with and organize groups.

Ink Captured Notes:

There have been several proposed ink capturing devices, but for many reasons they haven't developed into full-fledged products [1]. For this application, the combined needs for privacy and creativity in communication between close friends strongly supports ink captured messaging. In spite of broad computer use, teenagers still exchange handwritten notes with their close friends on a regular basis. This type of input was found to be more supportive of the individual expression and creativity commonly seen in teenagers' communication with one another. In addition, because the devices will rarely be used in truly mobile situations (i.e. driving, walking) inking presents few ergonomic problems.

Functions Excluded from the Application:

As part of any application design there are a number functions that, while possible, are inconsistent with the interaction model of the target user. Some of the features that we excluded from this application because of their inconsistency with teenagers included:

1. Automated locating via GPS to track teens' whereabouts: It would not support parents' seeking to instill responsibility in their teenagers.
2. A shared schedule: It potentially replaced one of parents' reasons for communicating directly about activities and commitments, effectively undermining the trust-building process.
3. Typical PIM functionality: It was associated with dull responsibility rather than fun communication with friends.

PART FIVE: CONCLUSION

This chapter has explored the question as to why cell phone use is less popular among US teens than it is among their Japanese and European peers. We began by exploring common structural

arguments—e.g. the pricing system and US network infrastructure have not, so far, encouraged widespread mobile phone use among youths. We then expanded the analysis by also considering cultural factors—what does mobile communication mean to US teens?.

Through an iterative ethnographic research and design project, BuddySync, the authors have found several unique values that underlie teen communication in the US.

There is a need for an alternative approach to existing mobile communication products that have traditionally been targeted at mobile professionals. By designing an application around an interaction model specific to teenager culture, we observed an increased usefulness, acceptance, and enjoyment of this mobile communications product among teenagers. Similar functionality could have been provided through a PC or PDA paradigm. While this would lead to a functional interface, it would be less engaging and less connected to what's important to teens. This iterative process of ethnographic research, design, and evaluation could be effectively applied to creating new products for other specific user groups (e.g. seniors, alternative cultures).

SOME EXAMPLES OF THE MOST COMMONLY USED ABBREVIATIONS

Despite the fact that the mobile phone in the U.S., both among the general population and, most especially, among teenagers, be far less used than in Europe or Japan, nonetheless youngsters do use abbreviations, very much like, if not the same, as those used elsewhere in the world. Here are some random examples brought up by a young girl:

ABBREVIATIONS	MEANING
tlk	Talk
2	To
lol	Laugh out loud
ILU	I love you
143	I love you
knw	Know
dnt	Don't
b/c	Because
w/e	Whatever
b	Be
u	You
Bf4L	Best friends for life
n	And
gr8	Great
nm	Not much
coo	Cool/
koo	Kool
wht	What
2night	Tonight
4ever	Forever
bff	Best friends forever
2morrow	Tomorow
loft	Laughing on the floor
brb	Be right back
nada	Nothing
<3	Love
grl	Girl
ur	Your
u r	You are
d8	Date
POS	Parent over shoulder
ova	Over
luv	Love
?	What?
k	OK
o	Oh!
nvrmnd	Never mind
ttul	Talk to you later
r	Are

Source: Nicole Shirk

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GLOSARY

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AOL: America on Line. An access provider to the internet, founded in 1985. Presently offers also services related to the internet and e-mail.

ASP: Application Service Provider. An applications service provider. When the new mobile telecommunication systems arrived, the applications service providers may be different than the network operators, and they may rent the use of the network.

AUDIOVISUAL: traditionally it is the sector which produced videotapes and even educational movie productions, which was not converged with the computer and telecommunications. Now that the audiovisual has converged with these technologies, it is better known as multimedia.

BANDWIDTH: A physical magnitude whose value is proportional to the maximum speed of transmission. So, the bandwidth is a measure of the capacity of a transmission medium.

CD-ROM: En English, it means "compact disc, read-only memory". It is a rather small disc, 12 cm in diamteter, which stores the information on a binary way and is later read by a very small laser ray. It may contain music, sound, text, still and moving pictures.

CHIP: An integrated circuit developed on silicon or other semiconductor materials, which permits a great number of electronic elements in a small size.

COMMUNICATION SATELLITE: Most often it is understood an artificial satellite, some 36,000 Km away from earth, in an ecuator orbit, which turns around at the same speed as that of the earth, and for that reason is called "geo-stationnary" (still in respect to earth). But there exist other types of satellites which orbit at lower distances and different from that of the ecuator.

COMPUTER: Programmable electronic machine wich has a central processing unit and information input and output channels. Today, the personal computer, especially when hooked up to a telephone line, is a polyvalent machine that either works as an information calculator or as a very developed typewriter, or as a powerful multimedia telephone, or as an image and sound creator…

CONTENTS: From several years now the term "contents" is used to distinguish, among the information technologies, between continent and content, betwen machines and networks, on the one side, and tose who carry and process them. The importance of this concept is above all economic, as it is now well known that the value of these technologies is the information (contents) that they process and carry, more so than the value of such technologies.

DVD: En English, "digital video disc", and is basically similar to the compact disch, although having more information capacity. It may, for instance, contain a whole movie in it.

GPRS: General Packet Radio System. Transmission service on packets based on the GSM system.

GPS: Global Positioning System. Positioning system developed and maintained by the United States. It is based on the reception of signals

transmitted by a set of artificial satellites, and thus the position of the receptor and the time may be known with a high precision. Europe is now developing an analogous and probably better system, which is called "Galileo".

GSM: Global System for Mobile Communications. A mobile telephony system developed in Europe, which began its service at the beginning of the 90's. Its development has been spectacular and has been exported to all continents. Presently it is the system with the largest number of users.

INFORMATICS: In Europe (in the U.S. it is called "computer science" or "computer industry") is applied to the hardware used to process information with the help of computers, printers, scanners, plotters, modems and the like, as well as the software that makes the hardware working.

INFORMATION AND COMMUNICATION TECHNOLOGIES: (IN EUROPE): It is the same as information technologies, although emphasizing the ability of those technologies to help people to communicate. It includes, therefore, those mass media that use electronics (radio and television), and it is the way that they are known in Europe: ICT.

INFORMATION INDUSTRIES: they are applicable to the business whose aim is dealing with information: editorial companies, movie industry, televisión... It is basically the same concept as "contents".

INFORMATION SUPERHIGHWAYS: Term coined by Al Gore, when vicepresident of the U.S., and defined them as a "seamless web" which eventually will transport all sort of information (data, sound and images) anywhere in the world. Internet is that very web.

INFORMATION TECHNOLOGIES: They are some peculiar ways of capturing, carrying, storing, processing and distributing data, information and knowledge using the properties of the electron (in the case of cable and wave) and of the photon (in the case of the fiber optic). The term is used in the U.S., as is applied to both telecommunication and computers.

INTERNET: It is an international network that used computers as network nodes, and telephone lines as connecting the nodes. For the time being it is free (anyone can enter it), with hardly no hierarchy or norms, and through it all sort of information flows (academic, commercial, artistic, criminal, religious…). Its contents are anyone having to do with human affairs. Most probably, together with the invention of the microprocessor, it is the most outstanding revolution of the 20th and 21st centuries.

LCD: Liquid Crystal Display. Technology used to build the new picture displays usually in the mobile handsets, PDAs and digital watches.

MASS MEDIA: They are agencies specialized in broadcasting messages (increasingly on a biased way, according to particular political views) to the public, through printed media (newspapers, magazines, street advertising…), electronic and photonic media (radio and television) and telecommunication media (videotex, teletex, electronic mail and the internet)

MICROPROCESSOR: Integrated circuit which permits interpreting instructions stored in memory elements. Usually it is part of a computer or other digital devices, and it controls them.

MP3: A format widely used to store audio information. Its main feature is that it compresses the information, thus allowing its storage in a limited space without a noticeable loss of it. The MP3 format is part of a standard family for the compression of audio and video known as MPEG (Moving Picture Experts Group).

MULTIMEDIA: They are relatively new ways of processing data and messages codified as digits, letters, sounds and visual signs, oriented towards the human eye and ear (and occasionally skin

feeling, as it is the case of gadgets for blind people), by way of simultaneously using the combination of telecommunications, computers and the audiovisual content industries.

NEW TECHNOLOGIES: In a strict way, this term is applied to tose technologies that have been strongly developed in the last tirad of the 20th century: new material, new polymers, computers… But the term has finally been used only for the "information technologies" (in the U.S.) and "information and communication technologies" (in Europe).

INFORMATION SOCIETY: A new social space and time where information is captured, carried, stored, processed and distributed using very intensively the information technologies.

NETWORK SOCIETY: Term coined by the Spanish sociologist Manuel Castells, to emphasize the fact that everything is connected to everything else, due to the information technologies. For Castells, the main beneficiary of such technologies is the financing system, and especially within it, the speculation activity.

PACKET: Information unit that is sent through certain telecommunication networks. In such type of networks, the information is split into units or packets, each of them arriving to destiny through different roads. This is the system used in the internet, and most often, in the networks that link computers.

PAGER: A device that receives signals transmitted by a set of audio station network. It is used to send messages to concrete persons that can be read in an alpha-numeric display. It is different from the mobile telephony in that it is unidirectional, that is, it only permits the information transmission from the network to the users, and not viceversa.

PDA: Personal Digital Assistant. Small computer somewhere in between a computer and a mobile phone. It is mainly used as an electronic notebook, and it permits simple applications.

PHS: Personal Handyphone System. A mobile communication system, developed in Japan, which offers service in limited environments.

PROPRIETARY: This concept has been exported to almost all languages, whereby meaning systems whose functioning structure is specific of a concrete operator or maker. In the opposite side, the non-proprietary systems permit the usage by equipment of various and different makers, as long as these stick to the specified standard.

ROAMING: A user possibility in a mobile system for using the service in a country different as his. For this to happen it is necessary that the operators of different countries use the same system and sign itinerancy agreements. The GSM system was the first to enable such possibility.

SMART CARD: Small card with a microprocessor on it which permits personalizing the mobile handset with the user information, and in the future it well may be used for doing transactions from it.

SMS: Short Message Service. A GSM service (in Japan a similar service is called I-mode) whereby short (up to 160 characters) text (alphanumeric) messages can be sent among mobile terminals.

TACS: Analogic (non digital) mobile telephony system developed in the U.K. and still used in other countries, although the system is slowly disappearing and giving way to digital systems.

TELECOMMUNICATIONS: Strictly, the telephone and its varied technologies (fixed, mobile) as the web and other services that derive from it (voice and written messages). Yet, on a broad way, it encompasses all transmission systems (radiolinks, satellites, radar…) and all switching techniques that the transmission requires.

TELESERVICE CENTER: It is an usually physical space with computer and communication resources, based on a network architecture, and whose presence in the internet is incsingly more evident as providing virtual services offered to the users. The name derives from the concept of Teleworking Center, but from a wider point of view.

TELETEACHING: It is an educational way of teaching at a distance, but it is strictly applied to the case where it is used as an information technology, and not when traditional tools, such as snail mail, are used.

UMTS: Universal Mobile Telecommunications System. A mobile telecommunication system developed in Europe, as a successor of the GSM, and now used in other countries such as Japan. Its advantage in respect to the GSM are that it offers the possibility of providing new and better services with greater transmission capacity.

MOBILE (CELLULAR) TELEPHONE: It is a particular and very well known case of telephony that transmits voice and data in a digital way through the air. Mobile telephony eventually will lead to the "personal telephony" (the telephone associated to the user, and not to the family or the institution).

TELEMATICS: Only used in Europe. It is the convergence between telecommunications and informatics. Term first used by the Spanish engineer in may, 1976 and then, with no known connection, by the French technical literature.

TELEWORKING: Refers to the overall concept of working at a distance, that is, not in the firm's working place but in any other (own house, telecenter…). It is also referred to as "working at a distance" when using Information and Communication Technologies.

INTERACTIVE TELEVISION: a particular versión whereby, besides the traditional signal reception, the user can answer the broadcasting center, telling, for instance, his(her) preferences, o participating in voting or contests in real time.

TELETEXT: Sending written information from the broadcasting center to the TV receivers.

CHAT: An internet activity by which one can comunícate simultaneously, in real time, with other people, so far by written language and very soon as an alternative to the telephone and to the video-telephone.

VIDEOCONFERENCE: the telephone conference which provides not only voice but picture. Since it requires a lot of information to be sent in the transmission systems, a great "bandwidth" is necessary, and the cost is accordingly high, too.

VIDEOGAMES: a type of software which can be used either in ad hoc machines or in personal computers. These games can be either bought or downloaded from the internet. Its target user is usually adolescents, and is hardly used after that period of age. Its most interesting quality is the development of the imagination, and the most negative, the invitation to violence.

VIDEOTEXT: A predecessor of the internet, slow and poor, which had little commercial success and little penetration, except in France (Minitel).

VOICE RECOGNITION: A technique that makes that a machine may interpret instructions given by a person in an spoken form.

WCDMA: Wideband Code Division Multiple Access: Acces technology, via radio, used in the UMTS system.

WEB: See "World Wide Web"

WWW Server: Worldwide web server, that is, a computer that stores the information of tose people and institutions which may be connected to it, and that, in turn, is connected to the internet.

Selection of documentary references on YOUTH AND MOBILE TELEPHONE

This relation does not try to be exhaustive and has been realized depending on criteria of current importance and relevancy to the monographic topic of the present magazine. It is formed so much by books, as by articles of magazine or documents of different origin, selected in the base of information of the Library of Youth Institute.

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