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Virpi Oksman

The mobile phone: A medium in itself

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Abstract

This dissertation examines the integration of the mobile phone into every day life as a communication device and as media. It focuses on the uses of the mobile phone as a pervasive multimedia tool and its relationship to other media in the changing media landscape.

The main argument of the dissertation is that the mobile phone is a medium in itself and it should also be regarded as a medium among others. In media studies the mobile phone has often been perceived as a sub-media to traditional media. As a medium it has its own specific characteristics and social functions, allthough its uses may vary in different contexts and cultures. However, this argument does not mean that the mobile phone is a medium without user involvements. The role of user innovations has been important in constructing the mobile phone's role in the media field: for instance, text messaging has brought a new kind of social interaction and media form with it. Indeed, the mobile phone has influenced the ways in which we can interact with other media. The mobile phone is located between personal, social and mass media, and can serve personal, peer-to-peer and mass communication purposes in different communications situations. The mobile phone, along with the popularity of personal computers, has contributed to the increased consciousness and idea of personal media, and the emergence of new kinds of media behaviour. The mobile phone is not only a developing tool for citizenship journalism and participatory media making, but also a channel between traditional and new media, as it, in some cases enables the interactivity of television. Text messaging has been incorporated into television and, in some cases, also into newspapers. It seems that the mobile phone as a personal and ubiquitous technology may lower the threshold for participating in media making. The role of the mobile phone as a tool in digital storytelling has become more important as the number of reader's own photographs as news material in newspapers has increased. The newspaper offices and other media have to find a solution for how to act with the increasing content produced by their audience; for instance, how to find the important news

and verify the reliability and originality of the material. The copyright issues with amateur content producers are also gaining more significance.

Yet, the physical user interface of the mobile phone is quite different from other media. This means that in the media production stage, the media content has to be tailored so that it can be accessed with a mobile phone and read on their small-screen user interfaces. Currently, there are problems related to the immature technology, such as mobile web browsing problems. Usability issues regarding small-screen user interfaces are particularly important. However, the size of the screen is not only a limitation but also an advantage, as in some cases as it can support the use of mobile media services in various places and situations. Other limitations, such as battery life and network coverage problems, may have an influence on the quality of the user experience as well.

The mobile phone enables an instantaneous news, information and discussion channel for the mass media. Indeed, the role of the mobile phone in participatory media making could be further developed in media companies. Furthermore, the possibilities of mobile phones are not yet fully utilized in crisis communication. More likely, the role of the mobile phone as an interactive link between the personal user and social and mass media will increase in the future.

Preface

I became interested in the use of mobile phones as media approximately ten years ago when I got the chance to carry out a project at Tampere University regarding the possibility of mobile media for news and other newspaper content delivery. At that time the Internet loaded very slowly on small mobile devices and the possibilities for mobile media were quite abstract for ordinary consumers. The most common mobile phones themselves were heavy models with black-and-white screens and simple voice and text communication. Back then many of the interviewees in my project saw the role of mobile media as supplementary in relation to other media in their daily lives. They thought that they could use mobile media only mainly when other media, newspapers or the Internet were not available. Nowadays, the mobile phone may be the first medium at hand to tell you the news and access information and no special situation or reason is needed to use it. Recent times have shown quite amazing development in devices, services and usage cultures. The mobile phone has become one of the most popular media devices all over the world. I believe that we are only in the first metres of this development, in which the mobile phone evolves into a pervasive multimedia device which reacts to its environment in different ways and can be used in more effective ways for personal, community and mass communication. At the same time, the whole media field is changing as media and devices and new technologies enable better interaction with users, use groups and media. Hopefully, this dissertation will give some new ideas in the field of the changing media environment.

Acknowledgements

Writing this dissertation has been a multiphase process which wouldn't have been successful without numerous people who have been helping me along the way in various ways. In proceeding with my dissertation, it was crucial to find a sharp focus and to concentrate on the essential and leave some unnecessary themes out. In this process I was delighted to get guidance from my dissertation supervisor, Professor Janne Seppänen from the Department of Journalism and Mass Communication at Tampere University. Janne has helped me to find that focus and clarify my direction and goals regarding the dissertation. Janne has been very supportive during the process and strengthened my belief that I am again one step closer to the target. I was also happy to get knowledgeable feedback and guidance from Professor Ari Heinonen from the Department of Journalism and Mass Communication. Ari Heinonen's first dissertation in the Department of Journalism and Mass Communication of the impact of new media (e.g. the Internet) on traditional media production has been an interesting and enlightening example for me.

Many people from the Department of Journalism and Mass Communication have helped me during the dissertation process. The late Professor Veikko Pietilä helped me in the early steps of starting the dissertation and PhD studies. Professor Taisto Hujanen gave me a cue regarding the theory of communication by David Holmes. Professor emeritus Kaarle Nordenstreng even remembered to ask about the progress of the dissertation by text message. I want to thank them and the personnel of the Department of Journalism and Mass Communication for providing good conditions for writing a dissertation in the department.

I want to especially thank my other pre-examiner Dosent Antti Kasvio from the Finnish Institute of Occupational Health of valuable and constructive comments for my dissertation. At the beginning of the 2000s, Dosent Kasvio was in charge of the Information Society Institute, where we started to research the

mobile phone communication phenomena among Finnish teenagers and families. Antti has always been very supportive and encouraged all of us in our dissertations and other publication plans. I want to thank my colleagues Pirjo Rautiainen, Jussi Turtiainen, Sanna Malinen, Anu Matfeinen and Hanna Liikala from the Information Society research team. I would also like to thank Eija-Liisa Kasesniemi for many interesting discussions concerning mobile phone cultures. I want to thank Pirjo Rautiainen, with whom I have co-authored many articles, especially warmly. Pirjo has opened up the anthropologist's viewpoint for me and emphasised how important it is to always do field work with real users and listen to what they have to say. Jussi Turtianen and I managed to get our first international publication in a journal.

I want to thank my opponent and the other pre-examiner of my dissertation Dr. Don Slater from the London School of Economics, for carefully examining my dissertation work and providing valuable feedback.

There are numerous international experts who have devoted their time to comment on the articles in this dissertation. I can only thank some of them here. I want to especially thank Professor Leopoldina Fortunati, Professor James Katz, Professor Joachim Höflich, Professor Maren Hartmann, Dr. Agnes Kukulska-Hulme, Dr. Pablo Cesar, Dr. Dick C. A. Bulterman, Dr. Konstantinos Chorianopoulos and Dr. Jens F. Jensen for their valuable feedback, support and the opportunity to publish in international forums.

My employer, VTT, has offered great possibilities to work with inspiring projects and themes regarding my dissertation. Especially interesting regarding my dissertation was the Podracing project in 2006–2007, where we developed different media services and technologies for mobile phones, including mobile TV services. I want to thank technology manager Caj Södergård, project manager Ville Ollikainen and Podracing project partners and article co-writers Antti Tammela, Carlos Herrero, Elina Noppari and Maarit Mäkinen.

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Technology manager Petteri Alahuhta and research director Rauno Heinonen I want to thank for the chance to get leave from VTT to finalise my dissertation.

For their financial support for my dissertation and PhD studies, I want to thank VTT, the University of Tampere Foundation, City of Tampere Science

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I also want to thank my friends and family. My mother, Hilkka, has provided invaluable help with childcare and her excellent cooking has kept me well nourished during many writing periods. My husband Vesa and our son Matias have successfully reminded me everyday that there is also a life beyond the dissertation. Thank you!

Tampere, April 2010

Contents

Publications I and VII are not included in the PDF version. Please order the printed version to get the complete publication (http://www.vtt.fi/publications/index.jsp).

List of publications

This dissertation consists of a theoretical introduction and the following publications, reproduced here by permission.

I Oksman, V. and Rautiainen P. (2002) "Perhaps It Is a Body Part": How the Mobile Phone Became an Organic Part of the Everyday Lives of Finnish Children and Teenagers. In *Machines that Become Us*. Ed. by James Katz. New Brunswick: Transaction Publishers. Pp. 293–308.

II Oksman, V. & Turtiainen, J. (2004) Mobile Communication as a Social Stage. Meanings of Mobile Communication in Everyday Life among Teenagers in Finland. *New Media & Society*, Vol. 6, No. 3, pp. 319–339. London: Sage Publications.

III Oksman, V. (2005) MMS and its "Early Adopters" in Finland. In Nyíri, K. (Ed.) *A Sense of Place. The Mobile Information Society. Communications in the 21st Century*. Vienna: Passagen Verlag. Pp. 349–361.

IV Oksman, V. (2006) Young People and Seniors in Finnish "Mobile Information Society". *Journal of Interactive Media in Education*, 2006(02), pp. 1–21.

V Oksman, V. (2006) Mobile Visuality and Everyday life in Finland: An Ethnographic Approach to Social Uses of Mobile Image. Höflich, J. R. & Hartman, M. (Eds.) *Mobile Communication in Everyday Life: Ethnographic Views, Observations and Reflections.* Berlin*:* Frank & Timme.

VI Oksman, V. (2008) Mobile Video – Between Personal, Community and Mass Media. Hartman, M. & Höflich, J. R., *After the Mobile Phone?* Berlin: Frank & Timme.

VII Oksman, V. Ollikainen, V., Noppari, E., Herrero, C. & Tammela, A. (2008) "Podracing": Experimenting with Mobile TV Content Consumption and Delivery Technologies. *Multimedia Systems*, Vol. 14, No. 2/July, pp. 105–114. Berlin/Heidelberg: Springer.

1. Introduction

In the history of mass communication research, one of the greatest challenges for communication studies has been the rapid development of information and communication technologies. Even the familiar notions of the media have become obscure, as the media have blended together in complex ways, blurring the former boundaries in the media field (Pietilä 2005, pp. 301–302). Clearly, the traditional media, such as television, radio and newspapers, are undergoing considerable change. More significant is the advent of new media forms and technologies, which are changing the face of mass communication. They are also changing how people interact with each other – new technologies are combining aspects of mass with personal communication (Williams 2003, p. 11).

The adoption of the mobile phone by larger user groups has been particularly fast. In Finland, the expansion of mobile phone use to larger, especially younger, user groups began in 1997 as new, inexpensive mobile terminals entered the market and mobile operators introduced more competitive prices for their services. The number of SMS messages sent during the first two months of 1998 was sevenfold greater than the preceding year. The same period saw the number of existing GSM subscriptions double. The seniors age group, (people over 60) adopted mobile phones a couple of years later than the other age groups. According to Statistics Finland, almost 80% of Finns aged 55 to 74 owned a mobile phone in November 2003. In 2005, the mobile phone had practically penetrated almost all age segments. For instance, the penetration of mobile phones is now higher than the penetration of TVs. The mobile phone is also more common than the car, the computer or the video recorder. In 2005, 43 % of Finnish households owned at least one multimedia phone (Statistics Finland 2006). Estimates show that people worldwide are more likely to own a phone than ‘more celebrated communication technology, the TV’ (Katz & Aakhus 2002, pp. 4–5). In 2007, the number of outgoing calls from mobile phones and the number of text and

multimedia messages has continued to grow. The volume of data transmissions, which have been affected by the introduction of mobile broadband connections, has also increased. (Statistics Finland 2008)

Table 1. Numbers of outgoing short messages and multimedia messages from mobile phones in 2002–2008. Source: Telecommunications 2008, Statistics Finland.

Year	Short messages, thousands [1)]	Change, %	Short messages/ subscription	Multimedia messages, thousands	Change, %
2002	1 324 668		293		
2003	1 647 218	24,3	347	2 314	
2004	2 193 498	33,2	439	7 386	219,2
2005	2 728 230	24,4	507	15 993	116,5
2006	3 087 998	13,2	544	21 568	34,9
2007	3 182 362	3,1	524	28 682	33,0
2008	3 566 523	12,1	517	37 801	31,8

1) Including service requests in short message format, i.e. special SMS services subject to charge, such as ring tones, screen logos or news updates.

In Europe, mobile technologies have developed in three successive generations. The first generation (1G) appeared in the 1950s and was based on the analogue cellular systems, which carried voice-only mobile services. In addition to the voice-based services, the second generation (2G), or GSM, introduced SMS (short messaging service), which became an enormous success, especially among young user groups at the end of the 1990s. Also during 2G, the mobile phone has been used for SMS-based news and for voice-based mobile news services (see Oksman 1998). Both the mobile phone as a device and mobile services have developed during the last ten-year period. The third generation (3G[1]) and newer, future generations will make higher transmission speeds and richer

[1] The third generation of mobile phone standards and technology.

content possible (see Dunnewijk and Hultén 2006, pp. 5–6). The forthcoming 4G is expected to provide a ubiquitous network experience and a wide variety of new services, including high-quality voice and video and high-data-rate wireless channels (Ibrahim 2002). While still maintaining their original function of one-to-one voice and text communication, the mobile phones have developed functionalities typical of other media. They have built-in cameras and video-cameras, and the use of different media content services and mobile TV is now available to users. The mobile phone has truly become 'a new information medium' as well as a device to 'harvest from the ever-increasing palette of the digital domain' (May & Hearn 2005, p. 200).

The role of the mobile phone is expanding far beyond simple personal communications (Gordon 2002, p. 15). The mobile phone is increasingly being developed for various future civic activities, such as voting in elections and engaging in m-learning, and has thus become literally an 'all-pervasive and all-inclusive means of conducting one's private and public affairs' (Selwyn 2005, p. 4). The development of mobile media technologies expands the usage dimensions of the mobile phone and creates possibilities for completely new kinds of social and functional uses.

One approach, which is closely related to the integration of mobile phones into everyday life and the ways in which users experience media technology is the widely used term 'domestication'. Domestication has been used to refer to the transformation process that media technology undergoes in becoming part of everyday life and environments, fitted into our routines, being 'tamed' (Silverstone et al. 1992; Haddon 2007; Peteri 2006; Pantzar 1996). According to Peteri it is important to note that both technology and users have influence on each other; technology is not something fixed which only adjusts to the everyday life of people: users interpret and develop the usages of devices and the actual usages are rarely something that has been planned at the desk of designers (Peteri 2006, pp. 54–62).

The original 1980s British focus on domestication was on homes. Later, with the spread of portable ICTs, especially the mobile phone, the domestication framework has been expanded to consider interactions outside the home (Haddon 2007, p. 28). When we observed young people's and families' use of mobile communication as a phenomenon connected with everyday life, sociocultural environment and other media use, we noted that the domestication approach cannot be realised in full when each family member possesses a personal mobile communication device which extends the use contexts beyond domestic envi-

ronments to a variety of public spheres (Oksman & Turtiainen 2004, pp. 322, 325). According to Morley (2002), communication technologies transform and rearrange relations between the domestic and the public space. In particular, mobile communication functions to broaden the sphere of the home outside the physical household; to blur the boundaries between the public and private spheres.

Whilst there is extensive research and discussion of how the mobile phone has integrated into everyday life, and especially into the lives of young people around the world (Ling & Helmersen, 2000; Fortunati 2001; Katz & Aakhus 2002; Kasesniemi & Rautiainen 2002; Ling 2004; Oksman & Turtiainen 2004; Ito 2006; Yoon 2006a–b; Höflich & Hartmann 2006), this dissertation aims to add another aspect to the discussion of the role of the phone in the everyday life, namely its use and development as a pervasive multimedia tool. The theoretical and practical issues associated with the design of the mobile phone as media from the mobile phone manufacturers' point of view would be also an interesting theme of research. However, as it appears that the users finally have an important role in constructing the mobile phone's role in the media field, by either accepting or rejecting certain services and features, this dissertation focuses on empirical studies of how the increased use of mobile phones and emerging user-generated content production and social media affects the whole mass media field.

Therefore, another, more central purpose of the dissertation is to explicate the definition of mobile phones as media and to discuss further how they integrate into the larger media field and how they could be regognized in media and communication studies. The development of mobile phones as media is closely connected to concepts which have recently been discussed in media studies, such as visual media culture (see Seppänen 2004; 2006), digitalization, media convergence and user-generated content production. In fact, besides the impact of the classic media on the mobile phone, the mobile phone has some special 'media logic' of its own, especially as it is strongly connected to user-generated content production. The history of the phone shows that users will finally determine how communication technologies are used, and, often, marginally considered users may find successful uses, such as teenagers and SMS (Lasen 2002, p. 7). Text and image messaging and video phone features have generated new kinds of interpersonal communication forms and cultures in peoples' daily lives

(Oksman 2006a–b). Furthermore, the importance of the mobile phone as a developing tool of 'civic journalism'[2] is evident, considering how its mass use can provide the spreading of news in situations and modes of delivery and distribution that the classic media cannot always compete with (Fortunati 2005a, p. 35). Thus, ordinary citizens have the possibility to participate in news production by sending news hints, information and pictures. These developments have transformed the ways of communicating with others and have impacted on the some of the basic conceptions of media and the process of mass communications as well.

The process described above relates to one of the central concepts defining the development of the relationship between media and society, namely the mediatization process (the terms 'mediazation' and 'mediation' are also used in communication studies[3]). Mediatization has been described as a dialectical, institutionally and technically-driven process that changes the social and cultural environment (Silverstone 2003, p. 3). Fornäs et al. also use the concept of mediatization to refer to a quite general relationship between media, society and individual. According to them, mediatization means the increasing centrality of communications media in society and daily life (2002, p. 6). In brief, mediatization can be defined as a mechanism that is understood to do something distinctive – that is to say, to ‘mediatize’ – particular social processes, objects and fields. In this sense, it is understood as a linear transformation from 'pre media' to 'mediatized' social states (Couldry 2008, pp. 376–377). This is, of course quite a problematic understanding of the term as it may turn out to be challenging to draw the line between 'pre media' and a 'mediatized' state of affairs. Anyway, mediatization goes beoynd simple causal logic and as a concept it both transcends and includes media effects (Schulz 2004, p. 90). Further, Couldry associates the concepts of meditiatization with the specific issues raised by digital storytelling (see also

[2] The idea behind civic journalism is that people without professional journalism training can use new technology and global distribution channels to create media contents. That is to say, citizen journalism refers to the phenomenon that ordinary citizens play an active role in reporting, collecting and spreading news and information. (Jensen 2007; Beckett, 2008)

[3] In fact, these concepts should be separated as they refer to different things. Mediation describes the concrete act of communication by means of a medium in certain contexts, whereas mediatization or mediazation refers to more long-lasting social processess brought by the influence of media (Hjarvard 2008, p. 114).

Koskinen et al. 2002; Oksman 2005). The potential for digital storytelling, according to Couldry, means that

"People who have never done so before are telling personal stories through digital forms, storing and exchanging those stories in sites and networks that would not exist without the world wide web and which, because of the remediation capacity of digital media, have multiple possibilities for transmission, retransmission and transformation available to them." (Couldry 2008, p. 374)

In turn, Fortunati discusses mediatization in the context of the Internet and refers to it as "the impact of the classic mass media to the fixed and mobile net". According to Fortunati, the outcome of mediatization is that the Internet has become a mass medium. Regarding the mobile phone, the transition of GSM to 3G has been seen as signalling the evolution of the mediatization of the mobile phone, the culmination of which is the ability to follow television on it (Fortunati 2005a, p. 7). At the same time, Schulz argues that mediatization as a concept is a product of the television era, as television and its condititions for message production are most often referred to when mediatization effects are discussed (Shulz 2004, p. 94). However, the mediatization process regarding the mobile phone is not restricted to the effects of television and other media, as there are several other aspects to be taken into account, such as its own characteristics as a medium. The mobile phone is strongly related to user-generated content production and affords certain kinds of uses, like creating a connected presence with friends and family with frequent text messages and calls (Haunstrup Christensen 2009) and the potential for digital storytelling. Being able to connect the mobile phone to social media such as Facebook and Twitter, and the possibility to update one's status and follow the updates of others, is reinforcing such a trend of connected presence.

According to Hjarvard, media cannot be separated from society and culture. Hjarvard uses the term mediazation to describe the growing role of media in society and the power of media over other institutions. Media has become the fabric of society and coordinates the interactions of other institutions. By the mediazation of society, Hjarvard refers to the process whereby society becomes increasingly dependent on media and their logic. Media has become integrated into other institutions and acquired the status of social institutions in their own right. However, media are not a uniform phenomenon; each medium has its own characteristics, and they vary in both use and content between cultures and societies. The outcomes of mediatization, then, depend on both the context and the

characteristics of the medium or media in question (Hjarvard 2008, pp. 106, 113–114).

In this dissertation I use the term mediatization to refer to the recent techno-social development process, in which the mobile phone and other means of mediated communication have become more and more important in everyday experiences and communication practices. At the same time, the mobile phone is being reinvented as a medium. The mobile phone and the Internet have long been used primarily for purposes other than broadcasting, but now cannot be overlooked also as media whose importance in the experiences of everyday life and in society continues to increase. The ways in which each medium intervenes into social interaction depends on the concrete characteristics of the medium in question, that is, both material and technical features and social and aesthetic qualities (Hjarvard 2008, p. 120). The mobile phone has increased the possibility for private individuals, groups and communities to create, receive and share personal, social and mass media content. Thus, the mobile phone offers an extended technological means to be connected to both one's own social network and larger society. The mobile phone has been strongly regarded as a personal medium, which can be defined as institutionally and structurally different from mass media with more possibilities for social interaction and user-generated, non-professional content creation (Lüders 2008, pp. 698–699). Recent technical developments have enriched mobile phones with text messaging options, larger colour screens, digital camera, mms messaging, video phoning – all of which offer mobile phone users the tools for digital storytelling. Besides this, there are various other multimedia functions on the mobile phone, such as the possibility to browse the Internet, produce content for social media sites, read text news, download music and videos and watch TV broadcasts on the phone, which have extended the dimensions of the mobile phone as a social and mass medium.

One of the most recent and perhaps the most interesting features from a media studies perspective is the development of mobile TV. In Europe, besides 3G networks, mobile TV services can also be used in DVB-H[4] and W-Lan[5] networks or as podcasted content, which are stored locally on the handset and can be viewed at any time without a network connection (see Oksman et al. 2007b,

[4] Digital Video Broadcasting – Handheld.

[5] Wireless local area network.

pp. 515–519). Mobile TV on the phone makes it possible to watch different media content, such as news and soap operas, on the go. Such developments raise questions about the role of these mobile media functionalities in the people's everyday lives. Firstly, it is not yet quite clear how users will perceive the functional blending of mobile telephony – which people seem to experience more or less as a personal form of communication – and mass media broadcasting (Picard 2005, p. 20; Fortunati 2005a, p. 17). Secondly, there are open questions regarding its use and usability and how it relates to other media in daily life. Will mobile TV mostly be used on the go or as an additional medium at home? Will it become a highly individualised niche medium or will the watching experience often be shared with others? Will the media content have to be profiled specifically for tiny screens for mobile phones and should there be specifically 'made for mobile' content? (see Oksman et al. 2007a–c; Knoche & McCarthy 2005).

The new developments described above represent a challenge to media theory and the ways in which media has been researched as a part of everyday life. There has been speculation as to whether the media theory that has shaped the understanding of mass communication and media in the twentieth century is adequate to make sense of the new challenges of the new media technologies – although, according to many, the themes often discussed in the contexts of new media are not novelties in mass communication research (see Williams 2003, p. 211; Pietilä 2005, p. 319; Fortunati 2005a, p. 28). Even though mobile communication has been an integral part of people's everyday lives for over ten years in Finland and mobile phones have been developing into versatile multimedia devices, it seems that, hitherto, media studies interest in the subject is quite rare. There is as yet little discussion on how mobile communications and mobile media could be researched and analysed from the media studies perspective in general. Overall, in traditional media studies, there is a vague recognition of the new digital media, and it has been mainly regarded as an 'add-on' to the traditional media. In more up-to-date media studies, the view of the new digital media as an 'optional extra' could be replaced with the recognition that they have fundamentally changed the ways in which we engage with *all* media. (Gauntlett 2007, p. 1)

However, it has been suggested that mobile phone research will be shifted from the utopian and dysutopian towards analyses through the more conventional theoretical and methodological tools found in media studies (May & Hearn 2005, p. 195). Furthermore, with the growing phenomenon of mobile information technology, it is becoming increasingly important to consider mo-

bile media not only as a strategically important site of innovation and re-invention of older, existing media (Goggin & Hjort 2009, p. 4) but also as a research field of its own (Nilsson et al. 2001, p. 34). Evidently, in new media theory, the Internet represents the most widely discussed manifestation of new media and the major part of the research on 'digital media' focuses on the developments of computers and the Internet (see, for instance, Flew 2003, p. 11; Lister 2003; Holmes 2005; Jones 2003). In addition, the mobile phones and the computer-based Internet, along with other new media, have quite diverse functions and roles in people's everyday lives. In the long run, it will be theoretically inexact to label them both under one theory or the quite problematic concept of 'new, digital media'. Thus more specific analyses of differrent mobile media technologies and their role in everyday life will be needed.

1.1 Research tasks

This dissertation aims to build an understanding for analysing the mobile phone as media from the media and communication studies perspective. The concepts 'mobile media' and 'mobile communications' have previously been used to signify completely different things in media studies (see Poster 2005). For instance, the term *mobile communications* has been used to refer to 'movement of information' – that is to say, the flow of information to fixed media. Moreover, the concept 'mobile media' has been used to define the fact that the physical device or the medium itself is mobile; thus, besides the mobile phone, it could refer to a number of devices, such as the newspapers, portable radios and walkmans (Poster 2005, pp. 31–32). Despite the fact that the other media may also be mobile, this research is restricted to the mobile phone and focuses on the last ten-year period, especially within the context of Finnish everyday life. During that time, mobile phones made their breakthrough and there was a shift to developing the mobile phone as a hybrid multimedia device. Moreover, mobility is also a felicitous metaphor for the media change as "the only certainty is that society and the human communication system will change together and often in unexpected ways." (Fidler 1997, p. 7)

This research – as media and communication studies in general – is located at the crossroads of different disciplines and approaches. Furthermore, the theoretical framework for the mobile media analysis used for this work consists of elements from the social sciences, innovation diffusion theory, the cultural studies approach and usability studies.

The following research themes operate as a basis for this dissertation**:**

– *How has the mobile phone integrated into everyday life as a communication device and as a medium?*

– *What does it mean to talk about mobile phones as media?*

The first theme focuses on questions that are central to media studies, e.g. what are the main characteristics of mobiles as media; how are they used; and what is their role, for instance, in different spheres of everyday life; in family communication, social life and and public activities. This theme concerns the basic questions of communication research and theory, such as media use, reception, influences and social contexts (see Mcuail 1994, p. 9). Additional, more detailed questions could be formulated as follows: Who communicates to whom? Why communicate? How does communication take place? What about? What are the consequences of communication? McQuail also specifies four relevant dimensions of media perception and reception: whether it is inside or outside the home, whether it is an individual or shared experience, and whether it is more public or private, interactive or not (McQuail 1994, p. 26). The second task aims to define the mobile phone as a medium in relation to recent developments in the media field. The aim of this research theme is to gain an understanding of the development of mobile phones as media and integrate mobile media into recent theorising in relation to other developments in the media field. Through these questions and analysis, this dissertation also aims to integrate the mobile phone research into more general contemporary media and communication studies.

The emergence of new communication environments and technologies has directed traditional media and communications studies more towards social and empirical studies – that is to say, the traditional concerns of media content and representation are expanded with the concerns of how media are used and experienced. For instance, how do media extend the social, reproduce the social, or substitute for other aspects of social life? (Holmes 2005, pp. x–xi). The theory building on mobile communications does not focus on determining the consequences of mobile phone use, but, more generally, its implications – that is to say, specific functional capacities to facilitate various modes of social behaviour, interactions and relationships (Geser 2004, p. 7). Taking into consideration what has been said above, I will next take a closer look at the research on social studies on mobile communication in order to understand the role and characteristics of the mobile phone as a medium.

2. Theoretical background and key concepts

As mobile phones made their breakthrough as mass commodities around the late 1990s in Finland and other countries, many discussions on the impacts of the new communications technologies on everyday life and social practices were raised. The early discussions were activated by researchers with social, cultural and media sciences backgrounds, and had wider a significant impact on the development of studies on mobile telephony. Research on mobile communication has been methodologically varied and includes different approaches from statistical analysis to ethnography (see Höflich & Hartman 2006; Ito et al. 2006), which will be discussed in more detail in Chapter 4. However, the discussion continues to be quite extensive and cannot be defined as a single, unified research paradigm. Rather, there are many theoretical and methodological approaches, and a wide range of different research questions, representing recent 'pluralist' thinking in media, social and cultural sciences (Gitlin 1994, p. 54; Giddens 2004, p. 2).

Moreover, common to these approaches is that the mobile communication is perceived as a social phenomenon, in its social contexts or within particular communities or culture(s). This includes, for instance, a research approach that describes mobile phone use as peculiar to particular countries or makes comparisons of specific features of mobile phone use within different cultural contexts (see, for example, Plant 2001; Ito et al 2006; Fortunati 2005a; Lorente 2002; Pertierra et al. 2002; Katz & Sugiyama 2006; Yoon 2006a–b; Castells et al. 2004; Oksman 2006c; Campbell 2007). The approach recognises the importance of locating the use of mobile phones in certain cultural contexts since, despite many similarities, there is no one universal global mobile phone culture; the social and cultural meanings of mobile communication and the mobile phone may vary within different cultural contexts. Moreover, in addition to the cultural

differences, the mobile technical solutions and services available in different parts of the world vary greatly. In Europe since the latter part of the 1990s, GSM has been the dominant system, whereas in the US there have been a variety of incompatible mobile digital standards (such as TDMA and CDMA). In Japan, i-mode technology, which conveniently combines the mobile phone, the Internet and attractive user services, became an instant success (Agar 2003, pp. 69–99).

Although cross-cultural and comparative studies are highly regarded, they also need to be "properly contextualised" so that the degree of freedom accorded to mobile users wont be overestimated (Murdoch 2000, p. 22). That is to say, the social and historical contexts in which we discuss the meanings of the mobile phone need to be analyzed in more detail in order to understand that the meanings associated with the mobile phone are not universal but may vary in different socio-historical contexts. For instance, in the contexts of the former East European countries, the mobile phone has been called a 'post-communist cultural icon' (Varbanov 2002, p. 9) in consumer-oriented societies, e.g. 'a fashion statement' among Japanese or American youth (Katz & Sugiyama 2006, p. 335). In Finnish society since the latter half of the 1990s, the mobile phone has been associated with the modern life style and the success story of Nokia, and it also represented an upturn in the economy after the severe recession in the early 1990s, after which Finland's economy became driven by the production of and foreign trade in information technology (see Statistics Finland 2006). [6]

[6] Thus Finns' general attitude to mobile phones has been quite positive. For instance, even though the possible radiation hazard caused by the mobile phone has been widely discussed and some countries in Europe have already made recommendations to reduce the radiation to the head, Finns have not been particularly concerned about the possible health risks (see also Kopomaa 2000). However, according to our studies, there were some major differences between different age groups regarding their attitudes towards the possible health risks. In 1999, when the mobile phone was still a new device, some seniors were under the impression that all electronic appliances (e.g. laser printers and microwave ovens) would prove health hazards. Some had had purchased a hands-free device with the aim of minimizing the risks. Evidently, the health risks were not perceived as a major problem because of the fact that seniors used mobile phones less than the younger age groups (Oksman & Malinen 2004, p. 4). The younger age groups, in turn, were at least concerned about the health risks, even though they used mobile phones the most. In 2008, the discussions of possible health hazards have been reactivated and new research projects have been started regarding the issue.

In general, the social scientist approach focuses *on the changes* in social relationships and society due the increased use of mobile communications. It appears that the role of mobile communication is becoming more and more ubiquitous in daily life: its presence as an integral part of of the everyday lives and social relationships of citizens of all ages is increasing and the constant mobile access is becoming more and more important both in public and in private spaces. In Finland, the research on mobile communication and its impact on people's daily lives and communication behaviours was first activated in the 1990s by social scientists J.P. Roos and Timo Kopomaa. In order to better understand how the mobile phone has integrated into everyday life, I will next examine some of the major themes and questions regarding the social scientific mobile communications research.

2.1 The Mobile information society

When mobile communications started to become more common in Finland in the 1990s, the new phenomenon aroused lively discussion on changing communication habits and related social phenomena. In the discussions, the mobile phone was most often compared to the fixed, landline telephone as it seemed to generate new freedom in relation to location, as the calls could be made and received 'anywhere, anytime'. Yet it appeared that it also had its reverse side, such as increased pressure and control created by its continuous reach ability (Roos 1993, Chapter 1, 'Introduction') and blurring of the boundaries of public and private life, which continuous accessibility contributes to (see also Giddens 2004, p. 469). In 1993 there were 300,000 mobile phone subscriptions in Finland, a country with 5 million inhabitants.

By that time, the mobile phone was such a rare object in everyday life that it was still considered a rather 'elitist showing off device, yuppie toy' (Roos 1993, chapter 1, 'Introduction'; Chapter 3 'The Meaning of mobile phone'). The discussion was not coloured with any kind of 'technology hype' and the mobile phone use was often associated with rather questionable behaviour. By contrast, Roos also stated that "*much of the opposition to mobile phones is of an elitist, privileged and intellectual kind*". (Roos 1993, Chapter 1, `Introduction')

Also, the use of mobile telephones suffers from the "bad image" given to the telephone by its fresh users: beeping telephones disturb meetings, restaurants, movie watching, and all kinds of situations where people have not previously

been accessible. Also, mobile telephones are in many countries associated with yuppies, showing off, half-criminal uses, which has increased the resistance for ordinary people to adopt them. (Roos, 1993, Chapter 1, 'Introduction')

This early debate shows that the meanings attached to mobile phones socially has met a considerable change in a decade. In the early days of mobile communication, the mobile phones were seen as 'yuppie tools' used by loudly speaking people to show off in trains or restaurants or public places that had previously been more silent. The debate stated the mobile phone as a revolutionary instrument that radically changes the way people interact and practice in everyday life. Roos (1993) states five dimensions that describe and define mobile phones*: mobile, accessible, instantaneous, private* and *personal.* The focus away from devices that depend on a fixed location towards more mobile devices is an important development in the history of media and communication technologies, and it is not restricted to telephones but also covers other media devices, such as portable music players and laptops. In principle, accessibility refers to a situation where the person who is being called may be highly mobile but s/he "is always there". Thus the mobile phone makes for much more efficient use of time by being able to fill the otherwise "wasted" waiting times with work or social contacts. Obviously, the permanent accessibility also had a negative side. For many people, being out of reach by telephone means freedom from unwanted demands and a possibility for uninterrupted activities. The instant nature of the mobile phone refers to the speed of communication. In the case of emergencies, the importance of mobile phones is absolutely crucial. The mobile phone also added a more private aspect to the telephone communication compared to fixed lines, which were often commonly used by all family members. The personal dimension of mobile telephony is connected to the fact that the mobile phone is a small portable object and to the change that mobile telephones brought with a system of personal numbers. Indeed, Roos argued that the mobile phone is *very ambiguous* in all the dimensions. It can be used also as a fixed phone to protect your privacy. In conclusion, Roos saw the mobile phone as a paradoxical device; the ability to reach others with it and to be reachable everywhere, which implies both absolute mobility and the opposite of it (Chapter 1,'Introduction').

The mobile phone is *par excellence* a device that bonds an individual with important social networks. It appears that, in general, sociology has advanced media studies by focusing on all social processes and studying the wider effects (Gitlin 1994; Giddens 2004, p. 2). The mobile phone is also perceived as a de-

vice for maintaining social order, to construct identities (Cohen & Wakeford 2003) and micro-coordinate daily life as it allows the opportunity for nuanced instrumental coordination, such as negotiating over where and when to meet (Ling & Yttri 2001, pp. 139–147; Ling 2004, p. 69), and to spin the web we call the social network (Ling 2004, p. 4).

Mobile communication has not only been considered to change how people interact on a personal and micro-social level but it has also been seen as closely connected with changes in modern society and the related theoretical discussions. According to Kopomaa (2000), the mobile phone has played a pivotal role in the entire development of contemporary Finnish information society. Our ability to be successful in everyday life depends on our ability to connect to important networks and get useful information. Kopomaa sees contemporary society as a 'Mobile information society' creating opportunities for ways of life based on either complete mobility or the lack of it (p. 4).

The mobile phone is an answer to the needs and hopes of the modern individual. It is an electronic communication device which has an adaptive effect on our way of life, introducing a new orientation towards mobile phone-oriented companionship and telesociability. (Kopomaa 2000, p. 121)

The mobile information society appears to be a new kind of society that both makes possible and necessitates mobile phone-oriented sociability as the non-user of a mobile phone may soon find herself or himself ‘a member of a disappearing tribe’ (Strassoldo 2005, p. 43) and find it difficult to manage common, everyday life things in the mobile phone-saturated society. Mobiles offer an opportunity for combining an active, mobile way of life with that which has previously been managed at home (Kopomaa 2000, p. 15) and create a new form of sociability, *telesociability*. One of the main impacts of the mobile phone on social life is that continuous accessibility has replaced the need to follow predetermined, tight schedules, which allows people to live more according to their own schedules (Kopomaa 2000). The other impact is on enlarging the number of potential communication partners available at any specific place at that moment (Kopomaa 2000; Geser 2004, p. 40)**.**

The idea of the mobile phone as a tool that increases ‘social efficiency’ condenses and describes modern urban life very accurately. Social efficiency may be understood in terms of increased contacts and immersed, synchronised living.

As a navigation tool, the mobile phone can be likened to the compass and the sounder; it is used to indicate movement and its direction. Indeed, navigation is one of the key metaphors for the contemporary lifestyles. (Kopomaa 2000, pp. 123–124)

Thus the mobile information society is defined as a society where mobile technology has assumed a central role in social relations, information seeking, learning, and, consequently, in people's attachment to society at large. Of course, the mobile technology as such should not be seen as the single and primary cause for chances in society. Information society means in general knowledge as a major factor of economic growth and and a more essential question may actually concern the increased *informationalization* that has taken place on different levels of society (Kasvio 2001, p. 24; Webster 2002, p. 273). Some consequences of these developments have been identified in social polarisation and social exclusion, and the heightened significance of skills and the constant redefinition of these skills (Castells 1997, p. 12).

Evidently, the mobile information society does not involve all people to the same extent, and, furthermore, the new forms of sociality and networking introduced by the mobile phone do not penetrate all people and all age groups as whole with the same intensity. For older generations, for whom it still constitutes a relatively new aspect in their personal histories and daily lives, the meaning of the mobile phone is very different than for young people who have grown up as ICT citizens (Oksman 2006c, p. 17). According to Ling and Haddon (2002, pp. 246–247), there are several motives associated with the use of the mobile phone, and generation also creates a factor in this. These motives include accessibility, display, coordination and safety or security. The accessibility and display issues are pronounced among teens and young adults. The use of the mobile phone for micro-coordination is most noticeable in families with children. Issues connected with safety and security are emphasized with older users.

It has been also estimated that new communications technology may also serve to accentuate the differences between people, also among young people (Holloway & Valentine 2003, pp. 20–41). The reasons may lie in inadequate material resources (access to information technologies) but also in a more complex set of cultural reasons, such as the parents' interests, opinions and values (Livingstone 2003, p. 42). Globally, ICT skills are considered necessary for the future. Poverty is a major barrier for many people as those who are most marginalized are often those who feel most excluded from ICT's and future hope

(Slater & Tacchi 2004, p. 89). On the one hand, there are different views on how mobile phones relate to the so-called 'digital divide' or 'information gap'. Leung and Wei (1999) found in their research, which was conducted in Hong Kong, that the 'mobile phone have-nots' tended to confirm the profile of the so-called 'laggards' in the diffusion theory – that is, the have-nots were older females with a small family size, lower monthly household income and education attainment. On the other hand, age was more significant than gender and the researchers suggested that the have-nots who were older and became laggards would be unlikely to convert. The have-nots also possessed less other information technologies and services. Leung and Wei define non-use as a problematic indicator of the mobile information gap and suggest that there is a polarizing phenomenon related with mobile phone ownership: they envisage that the gap between the haves and have-nots is widening as the availability of new communications technologies increases (Leung and Wei 1999, pp. 219, 222). Similarly, in Finland, the (rare) mobile phone have-nots most often tend to be women over 55 who live alone (Statistic Finland, 2006). However, in the last few years, mobile phone use by over-60-year-olds has also been growing very rapidly in Finland and in other countries. Although mobile use by young people and seniors displays some similarities, mobile communication still has a different significance in the daily lives of the two age groups. With young people in Finland, the communicative use of the device is highlighted, whereas the seniors, at least in the early stages of mobile use, appreciated the significance of the mobile phone as a tool to increase security (see Oksman 2006c, p. 12).

It is fair to say that mobile phones are not associated with quite same types of 'digital divide issues we find with the computer-based Internet (Norris 2001; Papacharissi 2002). International comparisons show that there are some educational and income-based differences in access to and use of the mobile phone, but they are not very clear in the Nordic countries (Ling 2004, pp. 15–16). Rouvinen (2004) states that the discussion on the digital divide may be somewhat misleading when we talk about mobile technologies.

In fact, digital technologies and their diffusion patterns rather promote cross-country convergence and, as compared to previous analogue technologies, are exceptionally democratic in the sense that they are generally available and applicable worldwide soon after their discoveries. (Rouvinen 2004, p.15)

In developing countries, the mobile networks and devices are more accessible than the preceding technologies, which makes the divide not so much digital but a more complex social phenomenon. Quite often, poor countries tend to have an inadequate and unreliable fixed line infrastructure, which also makes their citizens more likely to turn to wireless technologies, in spite of the costs (Castells et al. 2004, p. 41). The adoption of the mobile phone in some developing countries has caused interesting changes in some societal and business institutions. For instance, mobile banking is rapidly expanding in Africa (Mäkinen 2007, pp. 6–7). In many African countries, like Ghana and in Nigeria, where people have very little trust of local currency and banks because of inflation and other problems, the prepaid mobile airtime has become a real currency (Koskinen 2008, pp. 18–27).

Evidently, acquiring mobile devices is expensive for people in developing countries, but not as expensive as acquiring a computer or a TV set. Of course, it is debatable whether the ownership is an informative indicator alone. In addition, we should also consider a number of other things, such as how they are actually used, and the meanings attached to the use (Geser 2004, p. 42).

In addition, in the 'mobile saturated societies', the conscious choice of not to own and use mobile phones among some middle-class people has been also analyzed (Selwyn 2005). Similarly, the mobile phone use can also be seen as an important identity and lifestyle marker (Katz & Sugiyama 2006, p. 335). The non-use can also define identity, at least temporarily, as the non-use was often dependent on the present life circumstances. Some younger non-users even reported having received a sort of 'cult status' among their peers through not having a mobile phone (Selwyn 2005, p. 12).

Yet, in the mobile saturated information societies, the digital divide may be considered in terms of mobile literacy, which seems to be related to different age groups more than any other social variables (Oksman 2006c; Ling 2007). The elderly may be excluded from the use of SMS messaging for a variety of reasons. The design of the mobile devices may make it more difficult for older people to use them – the mobile phones are often too small and the keypads too difficult to handle – and the use of the multiple functions of multimedia phones, as well as mobile softwares, may be difficult without former experience of comparable applications. Thus mobile phones are not always heralded as liberating devices among older people in a similar way as among the young but are seen as

safety devices, towards which the general attitude is more reserved[7] (Ling 2007, pp. 1–5; Oksman 2006c, pp. 12–17).

Taking into consideration all the points presented above, it appears that mobile information society has different meanings for instance for people of different age groups and in different social environments. Yet, it order to get more complete picture of the interpersonal and social dimensions of mobile phone use in contemporary society, certain central aspects need to be analyzed further. Above all, the mobile phone has been considered as a means of individual communications, social inclusion, empowerment and liberation from fixed locations and timetables.

2.2 The mobile phone and media use individualisation

Mobile communication has become as part of structure of very different societies and cultural contexts and it is used by different individuals for various kinds of purposes. Plant (2001) found in her crosscultural research on the social effects of the mobiles, that there was no homogeneous mobile effect, although many of the same attitudes, responses, rituals and emotional engagements were discovered. There is a great stratification of cultures and practices which demand different forms of communication and relationships, including different social groups such as workers, housewives and teenagers. (Ito et al. 2006, p. 11)

Thus the impacts of mobile phones may be quite different and even contradictionary in various cultural, social and organizational contexts; such as empowering democracy on the one hand, and increasing social control on the other. (Menduni 2005, p. 91) However, even though there are no universal outcomes, we may find some general major social changes associated with the mobile phone. In particular, the process of the media landscape *individualization* has taken a step forward with mobile phones (see Castells et al. 2004). Yet, the topic of media use individualization has been assigned very different conceptual meanings. It does not simply mean that the social contacts would be replaced

[7] Earlier, in the 1999 period, it was common for older people (over 60 years) to receive their mobile handsets as presents from their adult children, and these 'half-mandatory safety phones' were rarely actually used by the seniors. The seniors studied in 2002 and after had usually purchased their phones themselves, based on an independent decision. (Oksman & Malinen 2004, p. 2)

with social isolation. Within youth and family communication contexts, for instance, it refers to new means of social interaction, which is often more peer group than family focused (Livingstone 2002, pp. 158–159).

Individualism in relation to media use also needs to be separated from narcissism and egoism, and the end of collective ideals. Indeed, the idea of persona itself is related to social behaviour, to different social scenes and situations, and can find fulfilment in relation to others (Maffesoli 1996, pp. 9–10). The media individualization in relation to the mobile phone is connected to the 'one-person, one-number' feature, which produces a strong sense of a personal phone with a one-user identity. The attitude towards the personal phone is quite different from the wired phones. Usually, people value the increased personal liberty to communicate from different places and at more flexible times (Gant et al. 2002, pp. 123–140). This individuality is one factor in why mobile technologies are often seen as "empowering technologies" (Geser 2004, p. 9) because they open up the possibility for individuals to free themselves from their immediate social surroundings and they afford a wide range of different individual uses, weakening the power of controlling institutions (ibid., pp. 9, 39). Geser sees the mobile phone as part of a continuum of other media technologies that have opened the possibility for individuals to free themselves from social forces and physical locations.

Long before the invention of mobile phones, books, radios, TV sets, VCR's, computers and other gadgets opened the way for individuals to free themselves (functionally as well psychologically) from their immediate social surroundings by empowering them to fulfil many material and psychological needs without relating to any others in their vicinity. (Geser 2004, p. 9)

Compared to other media, such as the home computer or TV, the mobile phone is more personal and its use is not usually shared with other family members. For instance, according to some studies, mobile television on the phone is often used at home as an additional, personal media device because there is no need to negotiate its uses with others in the family. Home use of mobile TV is different from other television uses in the sense that it can support a variety of viewing styles – such as lean back, lean forward and ambient viewing (Cui et al. 2007, Dowell 2006).

Even though the mobile phone is experienced as a personal medium, there are differences in how people engage with the individualizing mobile technologies

and how far the individualizing theses apply in certain local and cultural contexts and certain use segments. For instance, in Korea, the young highly value particular norms of local sociality in their relationships. Thus the indivualizing mobile technologies are articulated through traditionalizing forces, and the new communication practices often happen in old contexts. The young in Korea prefer harmony and collective interdependence. Sharing and borrowing mobile phones among friends is common (see also similar phenomenon among youth in the Nordic countries, Weilenmann & Larsson 2002, pp. 99–115; Kasesniemi & Rautiainen 2001, p. 165) (Yoon 2006a, p. 155). According to our studies, it was not uncommon for many older Finnish couples to share a mobile phone and use it as a family phone, not as a personal device. Furthermore, in many developing countries, like Kenya, mobile phones are not individualized media tools but are commonly shared with other family members, friends and neighbours (Mäkinen 2007, p. 7).

Many researchers have suggested that the public self and private self will become blurred and less solid as a result of the mobile phone use, or at least there is less differentiation between private and public (García-Montes et al. 2006, p. 69; Fortunati 2005b; Ling 2004; Geser 2004). This kind of double spatial existence, divided mindlessness, being mentally in two spaces at the same time, may also cause contradictions in everyday life. Yet the fact that people are acting with mobile phones daily may affect personal behavioural traits and identity but may also develop one's attentiveness – that is to say, the ability to be mentally present in several places and situations at the same time.

In some respects, personal, social and public communication in society has become more ‘democratized’ and ‘individualized’ with mobile phones – in other words, it has become more horizontal. Clearly, the institutions that previously controlled and guided people’s lives have lost some of their power and are losing their capacity to control the flow of communication by their members (García-Montes et al. 2006, p. 69). According to this view, access to a device and the power to decide over the content of the messaging are seen as liberating, which contrasts with the so-called traditional media that only has a one-way information flow controlled by the media companies or government.

Wireless transmission technologies are certainly at the root of all innovations that make communication compatible with spatial mobility. Remarkably, this portability was first realized for receiving-only devices, while transmission technologies (e.g. radio or TV stations) have remained stationary and under the

control of very few elitist actors (especially economic enterprises or governmental regimes). (Geser 2004, p. 4)

Regarding the family relationships, teenagers tend to experience mobile technologies as 'liberating' (Oksman & Turtiainen 2004; Ito 2004; Ito et al. 2006) because it allows young people more independent access than before. Thus they are able to communicate with their peers without direct parental control. Earlier, teenagers often shared a fixed phone with other family members. The use of text messaging makes it possible for young people to communicate in ways that are not always visible to parents. However, parents also use mobile phone communication to control their children in various ways (see Oksman & Turtiainen 2004, pp. 325–326; Ito 2004). The mobile phone has provided the young with a way of overcoming the spatial boundary of the home, and revolutionized the power geometry of space-time compression. The home phone, shared by inquisitive family members, would not even be appropriate for the constant, often 24-hour, online co-presence with friends afforded by personal mobile communication devices (Ito 2004, pp. 6–7). Thus the mobile phones define new techno-social situations and new boundaries of identity and place (Ito et al. 2006, p. 260).

Yet the mobile phone is not just an individualizing, empowering and liberating agent alone as it can also be used as a means of social control and supervision, both in public and in private life. Paradoxically, the mobile phone is used to both increase personal liberty from one's instant communities and as an important means of social inclusion. Thus mobile technologies often perform in "Janus-faced" ways that give rise to multiple, and in many cases paradoxical, implications, even though they are designed to do particular things (Arnold 2003, p. 231).

One of the major themes that has appeared in mobile phone studies in different countries and areas of the world is the deep connection between mobile communication and youth cultures (Castells et al. 2004, p. 3). The young have played a significant role in the adoption of mobile phones in different countries. For instance, SMS was originally developed as a side product to other mobile communication services and mainly developed for business purposes. Young people quickly adopted the service and became leaders on the text messaging phenomenon as they developed their own text messaging sub-cultures with their own terminology, customs and social norms, and often even also taught their parents and grandparents to text (Oksman & Turtiainen 2004, p. 325).

The mobile phone *personalization*, as an outcome of media individualization, is also closely linked to youth cultures. Through personalization of mobile media, the young express their individuality and group identity, such as by decorating the mobiles with stickers, accessories and straps. The coloured display and build-in camera functions promoted the personalization as favourite images could be used as mobile phone wallpaper (Okada 2006, p. 59). Okada sees the role of the consumer as absolutely critical. The *transformation* and the *adoption* of mobile media from the pager use at the end of the 1980s to the widespread use of the present multimedia mobile phone (e.g. *keitai*), has been a process that has been influenced by the users' active behaviour and preferences, as well as technical innovations. The adoption and the transformation of mobile media in Japan were also influenced by such societal factors as communications policy and market actions and regulations (Okada 2006, pp. 41–60). One critical factor behind the adoption of mobile media is the development of urbanization and consumer lifestyles (p. 46). Many multimedia features, such as the camera phone use trend, have been influenced both by the technical innovations and by usage patterns (p. 48). In Japan, the widespread mobile messaging system comparable to SMS is the mobile e-mail, and, similarly, in Scandinavian countries, text formatted messages outpace voice calls for young people (p. 49).

The mobile phone has been seen as having a crucial role in the technological transformation of time and space, and wide implications for the frameworks of society are seen as it is suggested that our principal perceptions of time and space are changing due mobile communications (Fortunati 2002, p. 615).

To quote Fortunati:

"*The mobile is changing not only society, but above all the framework in which society lives. This framework is made up of space and time as its primary determinations, which are able to integrate, stabilize and structure reality. The mobile changes reality in its widest sense, or rather its social representation.*" (Fortunati 2002, p. 615)

One of the main debates regarding the social changes focuses on how mobile communications impact on sociability and a way people keep connected to social networks such as friends, family, relatives and neighbourhood. Mobile phones are often considered a means of social inclusion. What forms of sociability and community do people engage with on mobile phones? Do the mobiles

alter the way people form communities and interact with each other? How do mobile phones integrate people with the larger society?

2.3 Social integration and mobile 'tribalisation'

Mobile communications have been related to wider discussion on changes in modernity, especially changes in social relationships. One of the discussions regarding social interaction and everyday life concerns the building of social networks and the nature of social integration and communities in cotemporary life. It has been suggested that the mobile phone has its own special social character as a medium, and using this medium is in itself a message, which adds certain qualities to communication. To quote Höflich: "Each time – with every new medium – communications in relationships have changed." (2006, p. 2). This approach is based on the argument that not only the shared information content matters but also, in the McLuhanian sense, "the medium is the message". Regarding the mobile phone, at least in close relationships, the point is often a feeling of connectedness rather than the actual shared information, which may often be quite lightweight. The mobile phone makes it possible to share feelings and moments by an online presence. According to Höflich, the mobile phone is *the* absolute medium of relationships of all the electronic media (2006, p. 3).

Feeling of always being in touch, at least in theory, creates security. You may be alone but you do not feel lonely. This may lead to dependence where one can no longer be alone. And there is another aspect to consider alongside the response patterns and a feeling of the security of the mobile phone: instant communication. We do not communicate only everywhere, but also immediately. Moods are passed on straightaway, there is no delay. Partners have to be able to share their current state of being. (Höflich 2006, p. 3)

Kopomaa discusses the same thing, concluding that 'people seek *synchronous living* by sharing moments and experiences, feelings and observations with their circle of mobile phone friends' (Kopomaa 2000, p. 6). In media studies, a comparable concept would be a *real time* effect. One of the significant features of new, digital media is the expansion of time (Heinonen 1999). The Internet allows content to be updated almost on a real-time basis, which, for example, differs from the traditional printed newspapers' 24-hour daily rhythm (p. 71). From the user perspective, the mobile media makes it possible to live in real time,

regardless of one's location, and adjust the media use to better suit one's own timetables. However, one may also ask why it has become so important to be constantly well connected and informed. Are we lacking something fundamental in our social life or do we crave news and information because we fear catastrophes?

According to García-Montes et al. (2006), one answer could be found in the new, more saturated time conception constructed in contemporary society, 'the present extensive´. This new concept is found in human relations as well as the precariousness of short-term employment contracts. Then, the only sure thing for people in the technological society is the present, with an ever narrower and more saturated horizon that the mobile phone helps to create. Increased information means that we know more about risks and dangers, and we tend to think in terms of risk. In this situation, the phone becomes a kind of 'talisman against diverse risks' insofar as it permits contact with the more and more complicated information society (p. 75). Thus the mobile is the instrument that keeps people in contact with one another and with the more abstract systems of society in today's world.

As most new media theorizing focuses on the development of the Internet, or at least considers the computer-based Internet the most important form of new media, the findings from Internet research are the most obvious comparison to the mobile phone. Regarding its relationship to the construction of personal identity, the mobile phone has been seen as quite different from the Internet, especially compared to the early Internet research (see Ito et al. 2006, pp. 8–9). One of the most influential characters of the Internet as new media has been specified as its characteristic of giving rise to multiple virtual cultures or communities (Jones 1997; Wellman & Haythornwaite 2002). Compared to the mobile phone, the computer-based Internet has been also discussed quite differently regarding questions of identity. There has been especially intensive speculation about the deep connection between the Internet and computer games and the emergence of youth cultures (Sefton-Green & Buckingham 2004, pp. 1–2).

New media technologies have also been surrounded by cyberutopian rhetorics, which have been discussing the possibility for interaction and user-generated content production as promoting democratic and community building potential on the Internet (Papacharissi 2002, pp. 9–10). In turn, to quote Ito (2006), "the extroverted, out-of-doors nature of mobile communication, as well as its low-profile origins in the pedestrian technology, has meant that the online component of mobile communications has not been experienced as cut off from everyday

reality, places, and social identies." (p. 8). Fortunati (2001) also associates the mobile phone closely with everyday life and considers it "a personal technology that will follow the individual everywhere, outside and at home, uninterruptedly." (p. 96).

The side effect of this embeddedness is an increasing physical and mental dependency on the mobile phone, which makes it necessary to react instantly to all kinds of ringing and messaging mobile phone signals (Kopomaa 2000, p. 40; Oksman & Rautiainen 2002, p. 294). It appears that the mobile phone is not just for accomplishing weak ties between people. According to García-Montes et al. (2006), never before in history has this dependence between people been greater than in our current technological world. Fortunati (2002) compares a mobile phone to 'an umbilicard cord' that allows people to reduce anxiety and uncertainty with perpetual contact (p. 615).

From the perspective of the social consequences, the mobile phones have been seen as a means of social inclusion. Yet, if we take into consideration the argument that mobile phones are very often used to strengthen already existing relationships and not to enlarge social interaction to wider circles (Geser 2004, p. 10), the situation looks somewhat different. Regarding this view, the mobile phones are often used even physically to distance oneself from current collocal interaction fields by directing attention to remote partners (Geser 2004, p. 40). This is the reason why non-users of mobile phones have perceived decreased sociability through mobile phone users' willingness to interact with those around them (Selwyn 2005, p. 9). Fortunati describes how it has become more and more difficult to surrender oneself to 'unknown land' because one always faces the new situations while equipped with the mobile phone. People carry their own chosen social networks with their mobiles to public places, where the public dimension is given less importance. Instead of conversing with people met outside the home, people choose to speak on the mobile phone (Fortunati 2002, p. 615). Japanese mobile communication researchers have called the phenomenon 'telecocooning', which refers to "a zone of intimacy in which people can maintain their relationships with others whom they have already encountered without being restricted by geography and time" (Habuchi 2006, p. 167) and "the production of social identities though small, insular social groups" (Ito et al. 2006, p. 10). The mobile phone-related sociability thus appears to be two-fold.

The mobile helps to stay permanently within the closed social field of familiar others: thus reinforcing a unified, coherent individual identity because the same

personality traits and behavioural patterns can be acted out within familiar communal setting… While the intrusion of strangers can be reduced, circles of established friendships can be deepened because a higher density of communication within such circles can be maintained: irrespective of time and place (Geser 2004, p.11).

Quite often, mobile communications have been seen as an answer to the radically different nature of sociability in modern societies and replacing older forms of communities. The mobile phones have been suggested to confirm social ties more than traditional media. The media in general is seen as a powerful force in either integrating or disintegrating people.

The cell phone can function as a powerful tool for re-establishing fluid, casual modes of informal communication typical for traditional communal life – thus counteracting the losses of communalistic social integration caused by traditional media as well as the depersonalizations of modern urban life. (Geser, 2004, p. 49*)*

Yet, although the power of media to intergrate or disingrate people is sometimes overestimated, it is quite obvious that mobile communication, along with other communication technologies, has a significant role in social integration in contemporary life. The modern sociability is not so much a replacement of the old, traditional models of interaction but a new kind of sociability that provides an expansion of one's local social networks. It appears that the mobile communication not only has an important role in people's daily micro-coordination, in the forming of social relationships and the cultures of particular reference groups, but also is an evolving phenomenon that keeps gaining new forms. The mobile-phone constituted micro-communities are not just replacements of face-to-face interactions or traditional geographically-based communities but emerging forms of public activities.

According to Maffesoli (1996), contemporary life is not so much rooted in a strong sense of community but around multiple, quite loose and shifting, forms of associations, which he calls neo-tribes (p. 11). Neo-tribes are micro-communities formed along shared consumer lifestyles and tastes, and are based on emphatic sociability rather than rational organization. This concept of social grouping is derived from Weber's analysis of 'emotional community' (Gemeinde), which can be applied to different kinds of communities (p. 10–12). A

similar kind of social formations has been closely related to the mobile phones, as the mobile sociability tends to be emotional and circled around a relatively small group of people.

The mobile phone functions as an empowering tool in private life as well as in the public sphere and at the marketplace, especially in working life (Menduni 2005, p. 89). The mobile phone has changed many work-related practices. It has shifted ideas about where and when we can travel, and how we organize our different everyday activities – how, for instance, we 'mirco-coordinate' work-related tasks (Ling 2004, p. 23). The mobile in general helps being accessible to and keeping in touch with important contacts at work, which, in turn, contributes to a better flow of information and effectiveness, *fluid interaction*, but also means that the professionals need to cope with an overwhelming flood of interaction from others (Kakihara & Sorensen 2002, p. 13).

There are not yet very many detailed empirical studies on how the mobile phone has been affecting the work of different media professionals. However, how the mobile phone is experienced and evaluated as a journalistic working tool has been studied (Hickey et al. 2008). Furthermore, a case study of Italian political journalists and politicians by Menduni provides an interesting view of how small public activities in particular can gain an advantage from the mobile phone (Menduni 2005, p. 90). Menduni starts with Habermas' concept of 'the public sphere' as the realm of social life where the exchange of information and questions of common concern can take place. Thus there exists a difference between the concepts of public sphere and public space. Menduni completes this view with Peter Dahlgren's idea that the public sphere is today largely defined by mass media, and besides this we should also consider the everyday social interaction, such as face-to-face communication, as a part of the public sphere. The mobile phones seem to provide an empowerment for the politicians' interpersonal relationships, adding mobility and intimacy to the usual phone conversations from their desk. Besides this, the mobile phone contributes to transformations of the public sphere, mainly with regard to political partners and the relationship to the media.

On the one hand, mobile phones have had strong impacts on the working processes of the political journalists, along with other professionals. One political journalist interviewed for Menduni's study describes the impacts of the mobile phone in everyday working practices:

"Our job has changed. Before we had to walk in parliamentary corridors fishing for some politician's statement to quote; now we can sit in a chair and dial a lot of mobile phone numbers." (Menduni 2005, p. 96)

On the other hand, even though the main advantage of the mobile phone for the politician is the management of social and political relations, there are many interesting new kinds of social practices, ideas, thoughts and attitudes that have emerged from the use of the mobile phone. Many of the interviewed politicians carry several mobile phones, which are devoted to different purposes, such as private communication, important political communication and less important politics, thus counteracting the blurring between public and private life. For the politicians, mobile phones are a time-saving technology compared to the computer-based Internet use; no special moment needs taken to use it. Mobile technologies also may create a safe place for a politician when they do not want to be disturbed. Compared to youth mobile phone cultures, the Italian politicians preferred quite different ways of using the mobile technologies. They preferred oral mobile communication and found several obstacles to using SMS and video messaging. There were technological difficulties with writing rapidly and the politicians found political language not appropriate for the small display. In fact, the interviewed politicians saw the mobile visual image as too tightly connected with the truth. Small lies regarding the politician's whereabouts could be more easily detected, and non-verbal behaviour such as facial expressions would be less under control on video calls than on regular mobile phone conversations (Menduni 2005, pp. 96–97).

People who did not belong to a politician's inner circle were invited to use other, more traditional communication means, such as a letter, a fax, etc. The mobile communication use by the Italian politicians was restricted to political tribes and seemed to be peer-to-peer communication (Menduni 2005, p. 99). These findings suggest that with regard to the social formations, the mobile phone was used quite similarly in professional use as in everyday communications with one's peer group: the mobile phone particularly supports communication within a small social circle, with the people one already knows, and people with very similar interests. According to Papacharissi (2002), this kind of 'tribalization' related to new communication technologies may end up with smaller, more specific discussion forums and more and more fragmented groups, which does not necessarily promote democracy (2002, p. 17). On the contrary, Humphreys suggests that the mobile communications may lead to an overall collec-

tivizing function in society because mobile phones allow greater mediated contact between people due to their flexibility and mobility (Humpreys 2005, p. 828).

Thus the discussions concerning the role of the mobile phone in social integration has been enriched by research findings from different fields. It is fair to say that the mobile phone has had a strong impact on the different levels of private and public, and also political life.

2.4 The mobile phone as a tool for public and civic activities

Wireless technologies may privatize, atomize and collectivize. (Humpreys 2005, p. 828)

As discussed above, the role of the mobile phone has been seen as a tie, especially between quite narrow, already existing social networks; it is now possible to practice a different kind of synchronous, more intensely mediated social life with a carefully selected social network. Furthermore, this has been considered the stable nature of mobile communications, that the mobile phone reduces itself to a simple level of bilateral communications.

It has to be considered that mobile phones are only capable of supporting highly decentralized network-like interactions, especially on the simple level of bilateral communications. Thus, older space-dependent interactions are still essential for supporting multilateral interaction fields, as well as more tightly integrated collectives like communities and organizations. (Geser 2004, p. 42)

Yet, recently, the mobile phone has increasingly been used for extensive and more centralized forms of communications, including mass communications, public and civic activity and organizational messaging, which can reach larger networks, communities, crowds, publics and masses. There are examples of how text messaging has been used in different kinds of civic campaigns in Finland and in other countries. For instance, at Midsummer 2008, some Finnish truck-drivers planned to organize a protest against the rising prices of gasoline, which was causing a crisis for transportation businesses. The information about the protest spread via a chain text message. The text message engouraged all truck

drivers to drive too slowly, at 20km/h, during the Midsummer period in order to jam the already congested holiday traffic[8].

Howard Rheingold (2002) discusses this kind of network-like and centralized mobile phone-related communications and movements with the term 'smart mobs'. With this term, he refers to the role of the mobile phone in public and civic activities. Smart mobs means that people can act in organized ways to achieve some common goals by using mobile technologies. Rheingold observed the mobile behaviour in different social networks and envisaged that mobile phones would become more significant tools for civic or public journalism and other different kinds of social movements. Civic journalism usually refers to a form of journalism that increases the capacity of ordinary citizens and communities to act on the news and express their views on public affairs (Nip 2006, pp. 213–214; Nieman Reports 2005). In participatory journalism, users generate some part of the content, whereas the professionals produce and publish the whole news product (Nip 2006, p. 217). Other mobile movements may vary from organized celebrity stalking by fan communities to various kinds of civic and political activities. Smart mobs were used in the Philippines to topple the regime of former President Joseph Estrada by sending information and coordinating a peaceful demonstration through text messages (Rheingold 2002, p. 159). According to Rheingold, smart mobs are new killer applications based on new kinds of social practices afforded by the new media. He expects profound social changes to happen because of the smart mobs.

Large numbers of small groups, using the new media to their individual benefit, will create emergent effects that will nourish existing institutions and ways of life and dissolve others. People might gain new powers at the same time as we lose old freedoms. New public goods could become possible, and older public goods might disappear. (Rheingold 2002, p. xiii)

[8] The message was formulated as follows: "Let's send a warning to the parliament about the high price of diesel. 19.6. SPEED LIMIT 20/km per hour from HELSINKI for 50 km in all directions. PLEASE FORWARD THIS MESSAGE". Because Midsummer is an important start to the holiday season in Finland, the truck drivers could be sure that they would get a lot of publicity and angry reactions in the media and that the parliament would have to react to their situation. In the end, the protest was cancelled. (Helsingin Sanomat 18.6. 2008)

One quite recent example of mobile phone-generated and supported movements was seen in Estonia when the Russian-Estonian youth were demonstrating against moving an old Soviet military statue from Tallinn city centre. The demonstrators used their mobile phones to send their peers the information about the emergence of the riots. Indeed, the authorities – that is to say, the Estonian government – also participated in the mobile messaging by trying to prevent more demonstrations from starting.[9]. The example shows that mobile communication can be used not only for interpersonal communication but also within the context of powerful and official institutions, between the government and the citizen. In the Estonian case, some government Internet pages aiming at giving information to citizens were disturbed by outsiders, whereas mobile communication was much less vulnerable to outside attacks.[10] Thus text messaging can also be used to consciously organize and share information, and give rise to short-term movements, which have much easier access to publicity than before. The mobile movements can be associated with popular culture, hobbies, political activity and other common topics of interest. The most crucial thing for this kind of movement is the knowledge of how to use the new technologies to inform and mobilize.

The examples above show that the small group communications that are often used by young people can grow into movements and mobile communications can extend from interpersonal communication to communication that can relate to larger groups and masses. These kinds of movements may be democratic, or advocate the interests of some specified groups or can also used in destructive ways against society (see Papacharissi 2002, p. 17). In Finland, for instance, the two school mass murderers in Jokela in 2007 and Kauhajoki in 2008 used the Internet and the mobile phone to swap their ideas. Both had placed videos of their intentions on YouTube shortly before the attacks. The new technologies also enable illegal activities and even terrorism, as they can be used to change ideas and coordinate activities (Ling 2004, p. 37). According to Gordon (2002), the mobile phone's role can be more far reaching than simple personal communications. Mobile phones have played a part in world events, such as in Manila in 2001 and on 11 September in New York, which prove their far-reaching ef-

[9] The next day of the riots, the Estonian government sent SMS messages to young people's mobile phones in Estonia: "*Stay at home, don't get agitated, Estonian Government.*"(Helsingin Sanomat 28.4. 2007)
[10] Helsingin Sanomat 2.6. 2007.

fects on communication and culture (2002, p. 15). The mobile phone is not only an artefact of popular culture but it has also enhanced the public sphere. There are similarities to the Internet, such as no or low content control from outside. However, the mobile phone is more immediate in nature than the Internet since: 'Internet newsgroups encourage debate; the technology of mobile phone enables action.' (Gordon 2002, p. 18)

Mobile phones are also increasingly being used as instant information channels when catastrophes or major crises occur. In fact, mobile phone broadcasting systems are being developed for the dissemination of public warnings (Samarajiva 2005, p. 738). Often, the mobile phone is the most instant means of communication in a major crisis. For instance, in the small town of Nokia in southwestern Finland there was a major crisis in 2007 when the drinking water was accidentally spoiled and 6,000 people fell ill. A text message warning about the polluted water from the authorities to the residents' mobiles would have been a much more effective way of informing than the news on the city's web pages, which were infrequently or not at all read. The information would have been immediately on the residents' mobiles and they could then have checked the news or information on the Internet or teletext. The report on the crisis management and communication regarding the water crisis shows that the authorities did actually consider disseminating information to residents via SMS but resisted because of a joke chain message circulating in the town (Seeck et al. 2008, p. 98). Indeed, verifying the authenticity of an SMS message may be a problem in crisis communication. False alarms can be costly and do a lot of harm. However, it appears that the potential of the mobile as a medium in crisis communication is not yet fully used. At the moment, the crisis communications often show the vulnerability of the mobile phone networks, which usually become overloaded and break down when a number of people try to call in order to get more information relating to the events (Nilsson et al. 2001, pp. 36–37). In turn, broadcasting to mobile phones proves a technically more reliable alternative because it is not as vulnerable to congestion as the conventionally used cell phone traffic (Samarajiva 2005, p. 738).

To sum up, mobile communications take various forms in society and have advanced beyond bilateral communications to include public and civic communications. The development of camera phones has further increased the possibilities to use the mobile as a means of opening civic conversations among local communities (See Kumara 2004; Seppänen 2004). To quote Castells:

Mobile communications devices are multipurpose, multi-channel connecting point of the network of communication of which everybody becomes a personal node. (Castells et al. 2004, p. 75)

Rather than defining mobile technologies as something that has a static nature, Cooper states that mobiles could be referred to as indiscrete technologies.

This is because it has the capacity to blur distinctions between ostensibly discrete domains and categories, take its place among a number of social and technical developments: not only public and private, but remote and distant, work and leisure, to name but a few. (Cooper 2002, p. 24)

In fact, this was not really envisaged in the early days of mobile communication when it was mostly discussed as a tool for personal communication, either increasing or reducing personal liberty. The uses of mobile phones and their social role have expanded far beyond the expectations. Moreover, as the mobile phone is more instant than other mediums, it could be used more efficiently as a medium for crisis communication by the authorities. Of course, the mobile crisis communication would have to be developed in co-operation among the authorities and teleoperators. In summary, the research on the social impacts of the mobile phone is important and relevant and contributes to contracting the definition of the mobile phone as media. Yet, the role of the mobile phone in relation to other media should be also considered in more detail, especially with regard to the recent techno-social changes and in relation to the other media – in particular, the implications of the mobile phone research findings for other media, especially the so-called “new” or “digital” media, and how to integrate the mobile phone research into media theory and larger discussions on media changes. The relationship between the mobile phone and the larger media environment, including traditional broadcast and print media, still remains to be explored in more detail.

2.5 'The participatory audience culture' and the mobile phone

The emergence of new forms of communication poses challenges for communication studies and media theories. Many scholars have speculated as to whether the media theory that has shaped our understanding of mass communication in

the twentieth century is adequate to make sense of the new challenges of the new, more participatory media technologies (see, for instance, Williams 2003; Holmes 2005; Pietilä 2005; Jensen 1998). Moreover, it is evident that the new media does not consist only of technical developments, new devices and applications. There is a new culture of audiences, who are responsive for more instant kind of messaging, giving feedback and discussing. According to Jenkins (2004), this kind of participatory audience culture is associated with new, interactive technologies and, especially, with fan cultures. Originally, participatory media skills were mastered through play within popular culture, but they are also being applied towards other powerful institutions and thus there is a much wider transformation of culture and society (Jenkins 2004, pp. 34–37). Of course, simply the availability of new technologies does not turn everyone into media content creators and active participants as such. There are different levels of participation, and usually only a small percentage of people will actually create content and interact, while most of the people focus on viewing (van Dijck 2009, p. 44).

However, the idea of a new, participatory audience culture is interesting; and what is the role of the mobile phone in it? As the participatory media culture is associated with new, interactive media technologies, the concept of new media needs to be defined more clearly. As a simple definition, “new media” refers to media that is new – that is to say, the digital media, such as the Internet, digital TV and the mobile phone. The term 'digital media', which points to the technical difference between previous analogue and print media, could be used as well. However, the term new media is often used in media studies to refer to the more or less complex social, cultural and historical background of different media forms. New media is "new" because it adds certain qualities to conventional media communication. The common characteristics and properties of new media are interactivity, user-generated content, low censorship, hypertextuality, intermediality, community building potential and multimodality (Flew 2003, pp. 10–11). New media is also new because it is still in the process of developing – that is to say, new functionalities and new uses and use cultures are still being created – more strongly than for the established and institutionalized media. Furthermore, new media is a quite extensive concept and there is no single answer for what new media is. It is certain that new media is changing and evolving, and there are new writings constantly being published to update the field. For instance, an Encyclopaedia of the history of new media consists of over 500 pages of an extensive collection of key terms, concepts and buzzwords of new media (Jones 2003, p. 1). The concept of new media is thus quite relative since there is

no absolute distinction between new and old media (Pietilä 2005, p. 313). This makes the concept problematic as the lines between old and new media are sometimes even impossible to draw.

Thus the idea of new media captures both the development of unique forms of digital media and the remaking of more traditional media forms to adopt and adapt to the new media technologies (see Flew 2003, p. 11). With regard to technologies, new media also engenders new functional media forms between new and traditional media. In many cases, the interactivity of TV depends on the mobile phone. The mobile opens a communication channel for different kinds of programs, such as the SMS commenting on current affairs programs for the Finish Broadcasting Company (YLE)[11], and SMS voting for the Eurovision song contest and Idols competitions. Actually, what is new media in this case and what is old? If we were to just simply concentrate on the technologies, the mobile phone and SMS messaging would be most likely categorized as new media, as they provide the two-way communication channel, encourage audience participation and are new compared to older mass media commodities like TV sets. Yet SMS messaging has been actively used as a part of everyday life for over 10 years in Finland. For the younger generations, who mainly use it to give votes, it doesn't constitute new media but is as 'old' as any other media since they have been using the mobile phones as long they are able to remember. The mobile phone enables the interactivity of traditional TV, which has become 'interactive' in the sense that the audience is given the possibility to influence the outcome of the media programme in an instant way. According to the understanding of interactivity by Jensen & Toscan (1999), one dimension of interactivity is the capacity to let the users exert an influence on the content and/or form of the mediated communication (Jensen 1998b, p. 201). Thus the traditional media is extended and given a new functional conception, even though there is actually nothing new technologically. In addition to SMS commenting and voting, along with the growing popularity of SMS messaging, a new kind of programme type called TV-chat emerged in the year 2000 (Sihvonen & Suominen 2002). This programme type is based on the interaction and discussion by SMS messages on the TV screen. The themes of TV chat shows most often concern dating or gam-

[11]In this programme type, members of the audience can send their comments on the programme by SMS, which then appear on the TV screen.

ing, but other topics also occur. Sihvonen and Suominen note that TV chat shows are based on the development of computer networks such as news groups and IRC. However, they are quite different because the TV and the mobile phone differ from the personal, networked computer; at least, the participants in computer-based chat shows and mobile TV chat shows, and the usage situations are often quite different (Sihvonen & Suominen 2002, pp. 7–9).

Although mobile communication has been conceptualized as a part of the new, digital media, and mobile phones are also strongly involved in changes to the participatory media culture and citizenship journalism (see Fortunati 2005a; Sirkkunen & Kotilainen 2004; Nilsson et al. 2001), it has not been a very central part of general new media and digital media theorizing. According to many (new) media theorists, the computer-based Internet represents the most discussed, most global and most significant manifestation of new media (Flew, 2003, p. 11; Holmes 2005, p. 51, Jones 2003, pp. 247–260). The mobile phone and the mobile Internet are often mentioned as part of new media (Jones 2003), but they have not been very extensively researched in relation to other media use. In the context of media theory, the mobile communications, especially young people's text messaging, has been regarded as "a narrow sub media of new media" (Holmes 2005, p. 188). This said, the fact that the mobile phone is often associated with the young age of the users, as well as women as one of the major user groups, has led to the understanding of it as a more trivial medium, more everyday commodity than high tech (Lie 2003, p. 20). Thus it has not been constituted as central in new media research as the more celebrated new medium, the computer-based Internet. However, the new media technologies are not universal but quite variable, and not completely independent of different social and cultural settings. For instance, in the United States, mobile messaging has been questioned as second-rate versions of their PC counterparts, whereas in Japan, the mobile messaging, in its portability, ubiquity and lightweight engagement, is seen as the most 'advanced' version of Internet access (Ito et al. 2006, p. 6). According to Ito, there are certain geopolitics reflecting the strong focus of the Internet studies in the field of new media. The United States has dominated the development and adoption trends of the broadband Internet, whereas the mobile communications have been driven by certain Asian and European countries. In the US, the mobile phones are not so much heralded as advanced but rather seen as a problematic technology that erodes one’s private space (p. 6–7). However, in many developing countries, like India and many countries in Africa, the mobile phone is often the first and only ICT device peo-

ple directly operate. Moreover, the interaction paradigm of the mobile phone is based on the realm of computers – which causes difficulties for users without former experiences with computers (Joshi & Avasthi 2007, p. 1). Regarding the widespread adoption of the mobile phones compared to fixed or even laptop computers, the mobile phone is the most obvious medium to introduce the Internet to the world's population globally. For instance, in Kenya, which is one of the fastest growing mobile markets in Africa, only 4% of the population have access to the computer-based internet, whereas 80% are covered by mobile networks (Mäkinen 2007, pp. 6–7).

It seems that users are accessing news and information on their mobile phone via the Internet more and more (comScore 2009). Internet use on the mobile phone has more than doubled from January 2008 to January 2009 in the United States. Also in Finland, the amount of broadband use on mobile phones has increased significantly in recent years (Statistics Finland 2008).

As a consequence of the combination of the mobile phone and the Internet, it is not very reasonable to make comparisons between Internet and mobile phone use as if they were completely different media. To some degree, it seems that the Internet content used on the mobile phone may be different from that used with the large computer-based screens. For the mobile Internet, users often choose content that can be viewed quickly in varying use contexts and content that is personally most significant (Kaasinen 2005, p. 132). However, it seems that the content used with the mobile Internet is becoming more and more versatile. In addition to news and information, social networking and blogging sites have emerged as very popular daily uses of the mobile Internet in the US (comScore 2009).

Moreover, in order to understand the mobile phone in relation to other media use, its role in the changing media field needs to be discussed further. Thus a wider perspective is needed in order to understand how the mobile phone and the new media integrate into the entire media field, and into media theorizing.

2.6 Mediaconvergence and the mobile phone

It appears that the new media discussion has often been quite fuzzy and communication scholars seem not to have been able to keep abreast of the rapid changes in the field (Pietilä 2005, p. 302). This poses two main problems for current media studies. First, there is not a complete picture of the whole complex and changing media ecology, and how the new media and traditional media will

counteract. Second, there is not enough adequate information and analysis of the outcomes of this mutual relationship between new and traditional media. It is clear that this media transformation will have profound consequences for different aspects of communications, such as the functioning of the media industries' and media users' everyday practices and experiences (see Leurdijk 2007).

The technological changes contribute to the importance of analyses of media convergence. Mediaconvergence is often referred to as the merging, coming together, joining into each other, and growing interdependence among technologies by different industries (see Jones 2003, p. 93), which mainly takes place mainly within digital media (Holmes 2005) but also in the context of classic media (Murdoch 2000; Herkman 2003; Fortunati 2005a). This approach is valuable in that it looks at the media field in its entirety, and makes it possible to accomplish a clearer picture of the entire ecology of the media field. By looking at the media field as a whole, there is also an intention to create a distance from technological determinism and focus on the interaction between different mediums and communication forms.

One media integration approach is developed by Holmes (2005), who argues that there is a great paradigmatic change in media studies. Media studies have become far more ambiguous as its object of study has been made much more indeterminate by the recent transformations in the field. According to Holmes, media studies have traditionally centred on the idea of mass media, but can no longer be confined to broadcast dynamics and is rather included in the more generic scholarships of communication studies (ibid. 2005, p. 7). Holmes suggests that rather than looking at networked communications and broadcast media as distinct fields, the interrelation of these two should be theorized (Holmes 2005, p. 83).

The early second media age theories (see Poster 1995, Gilder 1994, Turkle 1995) claim that there is a clear distinction between networked technologies and traditional broadcast media. The first media age was dominated by one-dimensional, hegemonic traditional media, which produced certain conditions, such as an indeterminate mass (audience), the isolation of individuals from the means of participating in public discussion and the disintegration of traditional community. The second media age, especially the emergence of the Internet as a new medium, is seen to overcome these conditions by offering individuals instant two-way forms to communicate and breaking the isolation created by traditional media by creating the opportunity to build cyber communities and interact and share information in a more open way (Holmes, 2005, p. 52). Holmes criti-

cizes the idea of making a historical distinction between *first* and *second media age*, which has been particularly emphasized by the early second media age theories. According to Holmes, the second media age theories have been wrong in estimating that there will be a rapid abandonment of broadcast as a source of information and entertainment as the broadcast era is eclipsed by the new, emerging era of networked media technologies. Holmes argues that there is no empirical evidence that the broadcast media will be eclipsed by new media[12]. Broadcast and network media technologies are mutually constitutive: '*network communication becomes meaningful because of broadcast, and broadcast becomes meaningful in the context of network.*' (Holmes 2005, p. 83). Thus, instead of making a strict separation between broadcast media and network communications, Holmes suggests an integration theory approach (p. 4).

Similar types of approaches that concern media integration, merging of media technologies, and the interrelation of new and traditional media have been developed by Fidler (1997), Jenkins (2004, 2006), Fortunati (2005a) and Murdoch (2000). Fidler (1997) discusses media change with the concept called 'mediamorphosis'. By this he means "*the transformation of communication media, usually brought about the complex interplay of perceived needs, competitive and political pressures, and social and technological innovations.*" By studying the communication system as a whole, we see that new media does not arise spontaneously and independently – it emerges more or less gradually from the metamorphosis of old media. The older media forms do not die – usually, they continue to evolve and adapt (p. 23). In fact, this was not the case with the mobile phone and the fixed telephone because the fixed phone has been practically supplanted by the mobile phone in Finland (Statistic Finland 2006). In other words, no successful new services and functionalities that could have responded to the changing communicating habits of consumers have been developed.

Mediamorphosis is a unified way of thinking about the *technological evolution* of communication media – the metamorphosis principle is derived from three concepts: co-evolution, convergence and complexity (Fidler 1997, p. 23). Yet, estimating the direction the mediamorphosis will take in the future devel-

[12] However, recent statistics show that in Europe, the use of Internet has been growing compared to traditional media use. (Internet world stats, internet usage in Europe, 2008) http://www.internetworldstats.com/stats9.htm Australian internet usage has overtaken TV viewing for the first time in 2008. (Nielsen Online, 2008) http://www.nielsen-online.com/pr/pr_080318_AU.pdf

opment is always a challenging task. For instance, in the 1970s there were various visions of what kind of new media forms there would be in the future and what kind of media technologies would be developed to support them. Indeed, there were visions of "pocket phones" that could be used to call anywhere, anytime. However, it was suspected that these devices would not be affordable or would not even modestly interest everybody. In 1970, Nordenstreng stated that one-third of Finnish people would possess this kind of pocket phone in 2000 and they would only be using it for business, not for pleasure or personal communication. In addition, Nordenstreng suggested that people would carry a separate, miniature TV set that could be used to send informational messages (Nordenstreng 1970, pp. 134–136). Furthermore, there was a great interest in the development of a picture phone, and it was prototyped in fixed phone networks in the 1960s. It was thought that the 'picture phone', would be a dominant medium in the near future (in the millennium), but it was speculated that telephone network would be too low in capacity in order to allow the image transmission (Martin 1978, pp. 170–171). By that time, TV delivery technologies were suggested as offering the best possibility for this new media form, not the telecommunications networks.

Picture phone would be less expensive, if a conventional mass-produced television set would be used. Your friends would appear on the same screen as Kojak and Archie Bunker. (Martin 1978, p. 171)

Nowadays, of course, we know that the telecommunications networks such as 3G are capable of transmitting pictures and videos, even though video calls are not widely popular among mobile phone users. The development of small, affordable, portable personal computers and their networks was often completely missing from the 1970s' technology visions. It is possible that future interactive TV will have the applications and program types described by Martin: a regular, mass-produced TV set is used to watch popular programs and engage in social peer-to-peer communication at the same time (see Harboe et al. 2007; Fokker et al. 2007; Oksman et al. 2009). The concept of TV would change to something completely different. The recent situation reflects the idea that there has been a great transformation of not only the technical standards, design and affordability of technologies but also social values, experiences and expectations. It seems that the mobility and personal dimensions of media use were not so much the focus of the discussions on future media use some decades ago. Perhaps mobility

and personality were not seen as valuable media properties that would concern all citizens at different times. As Agar explains, the mobile phone and mobility fit in with social values that dominate now, but did not decades earlier. The social world of the mid-twentieth century was hierarchical, paternalistic and, even in larger areas of the globe, totalitarian (Agar 2003, p. 24).

Evidently, it appears that the understanding of the development of technology is indispensable for understanding future media forms, which cannot be separated from new technological opportunities, although there are always a wide range of different social, political, cultural and economical factors influencing the developments in the media field. Thus it is also important for media and communication scholars to understand and discuss the developments of technology as it is also important to apply communication knowledge to technology and futures research (see Bouwman & Van Der Duin 2007).

Digital media is the most obvious object of convergence because of its technological characteristics, which make it easy to manipulate: the information in a variety of forms – letters, sound, images – can be translated to the universal language of 0's and 1's. Thus digital information can represent many forms and types of information that can be handled in the same way. It becomes easy to transfer information from one medium to another. *Digitalization* thus enables all media to become interchangeable (Jensen 1998a, pp. 40–41). There are different kinds of convergence perspectives: some focus on industry convergence and some concentrate on technical medium convergence, while others focus on the social and cultural practices that shape media.

Holmes distinguishes four different levels of media convergence: *1. technological convergence* – this form of convergence can take place at the level of delivery technologies, such as content being transported in a new way, for example as the Internet on TV; *2. functional convergence* – which occurs within individual mediums, such as the mobile phones converging with digital cameras; *3. industry convergence* – which results from collaboration between corporations in telecommunications, IT and media; *4. convergence between broadcast and networking as mediums* – which refers to the process in which older media are redetermined, made interactive and digital. The content of broadcast mediums, radio and TV are transferable across digital media.

Futhermore, when the classification presented above is applied to the mobile media context, we see that the different levels of convergence appear to be very close to each other, and also overlap each other to some degree. In technological convergence, earlier separate technologies interact, link, merge and use others as

recourses in new ways. Thus technological convergence leads to competitive conditions in which one industry's products and services are increasingly linked, absorbed or blended with another industry's range of offerings (Lei 2000, p. 699). For instance, convergence of mobile Internet technology and broadcasting technology brings additional functional features to the mobile phone, such as web browsing or the possibility to watch TV. Earlier, these functions were used on separate services and with separate devices: phones, computers and a TV set.

Industry convergence is inevitable for technological convergence since different kinds of transmission systems and delivery technologies cannot be converged and brought into use without the collaboration of several industries, such as teleoperators, device manufacturers, media companies and software application producers. Finally, the convergence between broadcast and networking as mediums is closely connected to all the other convergence levels in the mobile media context. At the moment, the older broadcast mediums such as newspapers, radio and TV are available on the Internet and on the mobile phone. To make mobile TV possible, all the levels of convergence need to be accomplished. At the technical level, this means convergence of different media delivery technologies such as DVB-H or 3G. At the functional level, a new feature is needed to implement it on the phone. The new functionality has to be an application that makes it possible for users to benefit from the new technologies. Industry convergence, such as collaboration between media companies, device manufacturers, software producers and copyright organizations is also inevitable when the media content is published through a new delivery system.

Figure 1. Mobile media convergence levels, modified from Holmes (2005, pp. 64–65). Picture: Nokia.

In turn, Murdoch takes a more general approach to media convergence, which, according to him, takes three main forms: 1) *the convergence of cultural forms*, 2) *the convergence of communication systems*, and 3) *the convergence of corporate ownership* (Murdoch 2000, p 36). Regarding this classification in the mobile media context, the convergence of communication systems is the most apparent. The convergence of communication systems may refer to the subsequent coming together of phone, TV and personal computer. Although there are considerable barriers to systems convergence, technologies are changing rapidly and barriers can be overcome (Murdoch 2000, p. 37). According to Fortunati, a degree of mutual influence between different media technologies inevitably happens because the communicative environment squeezes them into one space and because people make use of various means of communication in everyday life – one single medium alone is simply not enough. The Internet is modifying newspapers and broadcast media, and vice versa as the traditional media is changing the Internet. These manifestations can be seen as a process of mutual domestication and convergence of networked and traditional media (Fortunati 2005a, pp. 28–29). Traditional media such as newspapers, radio and TV have set the standards for information quality. It appears that mobile media users also

expect accurate, timely and high-quality information delivered through reliable channels. However, if a media channel proves to be inaccurate or technically too fragile, the user will soon abandon it for a better alternative (Nilsson et al. 2001, p. 34).

Yet, besides the convergence process, there is also a process of divergence involving a diversity of actors, technologies, products and services (Jensen 1998, p. 42). Furthermore, it appears that the convergence of media is accelerating. One important point the convergence has set for media research is that it emphasizes different kinds of *intermedial relations* (Herkman 2003, p. 1). Mutual convergence takes place also beyond digital media, between traditional mediums. Herkman argues that TV, as a major medium of the 1990s and as a result of technological convergence, has influenced both the content and the aesthetics of the popular press. Herkman calls this phenomenon 'televisualization' of the press, meaning a new kind of visual aesthetics (series of pictures, frame captures from television, television-style graphics, etc.) and an increase in the coverage of issues and celebrities made popular by television (Herkman 2003). Moreover, this kind of intermedial relationship can also be referred to as 'internetization' of the traditional media (Fortunati 2005a, p. 27), which means the influence of the style/modifications of classic media[13] on the Internet. In addition, this mutual influence has also generated 'meditiziation' of the net, and the mobile phone (Fortunati 2005a, pp. 41–43). On the Internet, the number of different kinds of media portal has been increasing – almost all imaginable media companies have their own websites. Many offer the latest news, which is updated continuously, and supplementary services such as extra material for popular TV programmes. Some TV programmes can only be followed through the Internet. Also, many web portals based on the idea of social sharing, such as YouTube, offer a wide range of media material. Regarding any interesting news and recent phenomena, there are video clips from the news in different countries. The mobile phone, in turn, has become a platform for a different kind of media services: it is possible to read summaries of newspapers, watch the TV news broadcasts and listen to radio programmes from multimedia portals such as Kanavat. (http://channels.nokia.com/kanavat/.).

[13] This can be seen especially in the development of interactive TV. (see Jensen & Toscan 1999)

Moreover, there is also a convergence-related phenomenon, which could be called the *'mobilezation'* of media and refers to the impact of mobile phones on other media. The videos taken by mobile phones already form a significant part of some web portals, such as YouTube. Many newspapers' online pages, as well as regular newspapers, publish newsworthy camera phone pictures and videos taken by their readers. The association of TV and the mobile phone is also notable. The interactivity of TV is most easily made possible with the mobile phone – SMS messages are given a special role as part of current affairs TV programmes as they appear as comments on the TV screen. For example, A-talk, a current affairs programme of the Finnish National Broadcasting Company (YLE) received a lively flow of comments on climate change from the watching audience by SMS. And beyond that there is also 'mobilezation' of the press: some national newspapers in Finland (such as Aamulehti) have been publishing columns that consist of readers' opinions and comments sent by SMS. Moreover, newspapers such as Helsingin Sanomat encourage and advise their readers to send topical news material via their mobile phones, and the number of readers' photos taken with mobile cameras in newspapers has increased[14].

The convergence of mobile media is often seen as closely connected to users' behaviour (Nilsson et al. 2001, p. 38), as the user role has been seen as particularly critical in mobile media development, while the economic rationale of convergence has been stressed more elsewhere (Herkman 2003). In their case studies, Nilsson et al give examples of how the users in temporary mobile contexts, public entertainment and sports events, used their mobile phones to get additional information faster than from other mediums and also participated in the process of production of information to websites with their mobile phones (Nilsson et al. 2001, pp. 36–37). Regarding the functional developments of mobile phones in Japan, the camera functionality was implemented to the mobile phones as it was noticed that people carried a separate camera with them in daily life. Before the camera phones, there was a strong connection with the use of pagers as mobile media and a certain kind of photographic culture with the taking and social exchange of sticker photos, called *purikura*, among Japanese youth (Okada 2006, p. 58).

According to Jenkins, convergence is both a corporate-driven and a consumer-driven process (2004, p. 37). As Fidler noticed, there are many factors that con-

[14] Helsingin Sanomat 17.5.2007.

tribute to media convergence, such as perceived needs, competitive and political pressures, and the emergence of social and technological innovations. Thus the mediatization of the mobile phone is closely related to media convergence. Moreover, media is only one of the many functionalities that have converged to the mobile phone; many other daily objects have done it too (see Figure 1).

The mobile media definitely has its own multifaceted role in everyday communication. As a broadcast or a mass communication device, the mobile phone has its own features and limitations, such as battery life, screen size, poor network coverage and design implications (Cui et al. 2007, pp. 201–201). There are many different factors influencing the development of mobile media and media convergence. At the moment, there are differences that matter if we consider usability and user experience of the computer-based Internet access on the mobile phone. According to Roto (2006), Internet use on the mobile phone faces several usability and user experience-related challenges. For instance, the mobile web browsing technology is often immature, which may lead to poor user experience (p. 70). Kaasinen (2005) defines the major challenges for mobile service as the usability restrictions of the mobile devices and the problems with the technical infrastructure and demanding contexts of use (pp. 22–23).

Mobile use contexts are often different from other use contexts, such as at the office or at home. There are a wide range of mobile use contexts and the situations may often change during use. The mobile services may be used on public transport, while walking on the street, in parks, at university lectures, and even while driving a car (Roto 2006, pp. 53–54; Kaasinen 2005, pp. 11–13; Oksman et al. 2007a, pp. 27–30).

Yet it has become difficult for users to make a distinction between network and broadcast media. Broadcast content is increasingly available on the Internet and many TV programmes can be downloaded for watching later. Furthermore, at the moment, some of the newest multimedia phone models incorporate several types of media technologies. For instance, a radio or the capacity to receive broadcast from their own broadcasting networks have been implemented in some mobile phone models. These mobile broadcast networks optimized for mobile use have to have been built because traditional television networks do not support mobility. However, even though broadcasting and networks as mediums are converging, it appears that people may expect different things from different media devices. Especially with the mobile phone, users also expect to get more from mobile TV than conventional news and programmes. Many people prefer short and even niche content for their brief moments of mobile view-

ing. Many of them hope for customized services, which could give them a feeling that they actually get more than others, thanks to a mobile television (Noppari 2007, p. 50; Oksman et al. 2007c). Moreover, mobile TV users also expect extremely personalized, topical and local content (Kaasinen et al. 2008, p. 3).

2.7 Summary: The mobile phone – a medium in itself

The objective of this dissertation is to study what kind of meaning the mobile phone has as a communication device. In addition, another aim has been to discuss what it means to talk about mobiles as media. The questions were approached with the term 'mediatization', which refers here to the growing importance of media and technology in everyday life experiences.

The preceding chapters have examined social studies on mobile communication. Many of the themes that emerge from social studies of mobile phone use resonate with process of 'domestication', which can be used to explain the transformations that a technology undergoes in becoming an integral part of everyday life. It is quite evident that the mobile phone has had a strong impact on the different levels of private and public life. The mobile phone has been considered a means of individual and community-related communications, social inclusion, empowerment and liberation from fixed locations and timetables. However, there are certain interesting developments which have been less studied.

To apply the idea of participatory audience cultures of Jenkins (2004), the new participatory media skills were originally mastered through play within popular culture, but are now also being applied to other powerful institutions; thus there is a much wider transformation of culture and society. This means that users or networked audiences have a much lower threshold for participation because of the new technology and media skills. Globally, there have been many quite powerful mobile movements related to different interest groups, fan cultures and even politics.

Furthermore, the analysis clearly shows that the mobile phone is already a medium in itself. Its uses have expanded beyond multifarious personal communications to the societal level. It is used as a medium for various civic activities, such as short-term "mobile movements". Even though this kind of societal and even political mobilizing is not the most mundane use of the mobile phone, it proves that the mobile phone carries wide societal importance as a medium.

Moreover, the mobile phone has become an important part of the changes in the media landscape. Media convergence has integrated traditional media con-

tent with the mobile phone. Vice versa, the mobile phone contributes to other media. The mobilezation of traditional media enables interactivity between television and newspapers and a more participatory audience culture. SMS commenting may be published in web magazines, and also in printed newspapers, in special columns devoted to SMS messages. Emerging areas such as civic journalism are also open new possibilities to media users and companies. The mobile phone makes the interactivity of television possible. The mobile phone enables the link between TV and its audience more directly than the computer-based Internet as not all household members have their own computer, but usually have a mobile phone at hand.

It is quite challenging to define the characteristics of the mobile phone because it is far from being a static medium, and there are a wide variety of different uses peculiar to certain use segments or cultural contexts. However, there does seem to be evidence that, compared to other media, the mobile phone is an instant medium, which certainly is an advantage if we consider the real-time effect on news delivery. For instance, crisis communications could benefit more from the development of mobile communication technologies, especially from the development of mobile broadcasting. At the moment, the crisis communications often show the vulnerability of the current mobile phone networks, which often become overloaded when a number of people try to call in order to get more information relating to the events.

Another central characteristic of the mobile phone is that it enables spontaneous interactivity. It seems that the mobile phone is more immediate than the Internet in the sense that whereas Internet communities often encourage discussion, the mobile phone enables direct action. Furthermore, the mobile phone is important as a development tool for civic journalism: it can provide additional information and spreading of news in situations in which the traditional media cannot always compete (Fortunati 2005a). Thus ordinary citizens can participate in news production by sending news pictures and videos about specific situations where the other media was not present. This development has had an impact on some of the basic conceptions and processes of mass communications. Even though the traditional media companies have the greatest resources for news production and professional journalists still produce most of the content for mainstream media, in principle, anybody who has some newsworthy material to share has the possibility to get it published. Currently, the most persistent problems in the use of the multimedia phones as civic or professional journalistic tools are technological problems such as the limited video quality.

The mobile phone has contributed to media use individualization. Even though the mobile phone is experienced as a personal medium, this is not to ignore the fact that there are differences in how people engage with the individualized mobile technologies and how far the individualizing theses apply in certain local and cultural contexts and for certain use segments (Yoon 2006a–b). Paradoxically, mobile technologies have "Janus-faces" (Arnold 2003), as they often perform ironically and in unexpected ways. To be more exact, it is not actually the technologies that perform in certain ways but the unsuspecting user groups, who may find new unexpected uses.

Along with other new media, the mobile phone is yet an uninstitutionalized and undetermined medium, at least when it comes to mass communication. This not only refers to the technical functionalities, such as problems with the connectivity, but to the role of the mobile phone as a mass medium, which is not so established. Users may yet consider the mobile phone unreliable if the news source cannot be directly authenticated in SMS news and information delivery.

The mobile phone is a diverse medium in the sense that it incorporates several types of possible content, functions and technologies. The use of the mobile phone as media serves different purposes. First, the mobile phone is a medium for various kinds of interpersonal communication and user-generated content production. Furthermore, improved opportunities in the use of visual communication, mobile Internet and broadcasting have transformed the mobile phone towards a multimedia device used to both receive and produce mass media content. Moreover, the mobile phone has become a personal multichannel connection point to the information society network (Castells et al. 2004). Information society means increased informationalization that has taken place on different levels of society (Webster 2002). Increased information also means that we know more about risks, accidents and disasters, and we tend to think in terms of risk. In this situation, the phone becomes a kind of ‘talisman against diverse risks’ insofar as it permits contact with the abstract postmodern society (García-Montes et al. 2006). Thus the mobile phone is the instrument that keeps people in contact with one another and with the more abstract systems of society in today’s world.

Finally, the mobile phone is a medium that is open to users' innovations. This means that the future use groups may find new uses and use the mobile services and technologies in unexpected ways.

3. Methodological issues and the research materials

3.1 Exploring the meanings and contexts of mobile technology use

According to the theoretical frameworks of cultural studies of technology, technologies emerge out of processes of choice and flexibility, or the different meanings that various relevant social groups hold (Bijker 1992). Rather than mere physical objects, technologies can be seen as a socially construed part of human action and information production (Bijker & Pinch 1987). Technology and its impacts are construed and defined culturally; technologies do not speak for themselves or have a meaning outside of people's interpretations. The interpretations and meanings produced in social interaction occupy the most central position in the equation. In addition to their existence as material objects, communication technologies, such as mobile phones, can be seen from a viewpoint of symbolic articulation, as cultural meanings and interpretations. The semantic universe of these symbolic meanings is generated in social processes, and they have a bearing on the ways in which people act in their everyday lives (Lie 2003, pp. 10–11; Silverstone & Hirsch 1994, pp. 15–16). However, the perception of technology as a social construction does not here argue that the technological artefacts would not exist as material objects at all; it refers to the importance of interpretations and meanings produced in social interaction between people: the ways in which mobile technology is seen and observed subjectively and socially, and the meaning that is given to these observations.

The empirical research work for this dissertation has been partly carried out in research by the University of Tampere and VTT Technical Research Centre of Finland. In order to understand and bring out the social meanings and cultural

practices related to mobile communication by different age groups, we have used a ‘multi-method’ approach in our projects. That is to say, various qualitative and ethnographical, but also statistical, methods are combined in order to understand the actual usage patterns and the significance of mobile communication for different user groups. The methods used include questionnaire surveys, thematic interviews, field experiments, observation, user log data analysis, and analysis of user-created material such as collections of SMS and MMS messages, photography, picture collages and media diaries. Our purpose was to ask people to explain the logic and rules of their own social environment, so we met people in places familiar to them from their own everyday lives and pertaining to their natural mobile phone use situations. This is in line with the methodological approach developed by Harré and Secord, who argued ironically that '*it is possible to treat people, for scientific purposes as if they were human beings.*' That is to say, people are capable of understanding and analyzing their modes of action and thus the best way to study human-related phenomena is to ask the people themselves (see Harré and Secord, 1972 pp. 52–55, 105–106). The seniors’ and families' interviews were often held in their homes, and young people were interviewed in places popular among young people in general, such as fast food restaurants and coffee shops. The duration of the interviews was approximately two hours and they were carried out in all parts of Finland, in both urban and rural areas.

Our research design of ‘applied multi-method ethnography’, which could also be referred to as ‘multi-modal ethnography’ (see Dicks et al. 2006), is largely based on thematic interviews and other research material to support them. The benefit of this research approach is that the combination of different methods gives more versatile results than using one single method alone. Over the years we have gathered different types of material produced by the informants themselves, such as media diaries where young people describe their everyday media use and other quantitative materials such as user logs. The articles include citations from interviews that foreground the experiences of the researched in their own voice. Using a research design like this, it is important to remember that meanings are not produced by the informants alone; they are also created by the researchers involved (Holstein and Gubrium 1995, p. 4). Interpreting the material poses many challenges, and not all of the many meanings embedded in the responses can always be extracted from the data. The research interviews were usually semi-structured. The interviews have been transcribed and thematically divided into subsections. As the research progressed, interesting themes arising

from the data were raised as targets of analysis and were discussed in subsequent interviews with the informants. Comparisons were also made to earlier findings on the mobile communication of Finnish children, young people and their families initiated in 1997 and to a project carried out in 1999 examining the mobile communication of seniors. We have followed a principle of 'active sampling': new focal groups can be introduced in the interviews as information about a studied phenomenon spreads and a need emerges to acquire additional information on a specific issue (see Holstein and Gubrium 1995, p. 74).

3.2 Multi-method ethnography

According to the established tradition (e.g. Van Maanen 1988), an ethnography is a written representation of selected aspects of a culture. Ethnographic writings can and do inform human conduct and judgement in innumerable ways by pointing to the choices and restrictions that reside at the very heart of social life. In the anthropological tradition, ethnographic fieldwork usually means living with and living like the people being studied, and anthropological fieldwork routines involve immersion in a culture, even over a period of years (Van Maanen 1988, pp. 1–10). When examining the use of the mobile phone or the Internet in contemporary society, researchers are already living amidst the studied phenomenon. In a situation like this, the researcher leads 'a double role' that – in addition to making observations and analyzing the lives of fellow human beings as an outside observer – also involves living amidst the phenomenon and becoming a part of it, for instance as a user of the mobile phone and the Internet. One of the challenges in this type of research thus constitutes eliciting interesting results from a familiar everyday setting. According to Silverman (1994), 'The good observer finds excitement in the most everyday, mundane kinds of activities' (p. 30). However, besides written representation, ethnographers have used photos and audiovisual material in research representation for a long time (Pink 2003, p. 10). More recent definitions of ethnography do not consider it simply a method of gathering or documenting data but more like a process of creating and representing interpretation and knowledge that are of ethnographic interest (Pink 2003, p. 23). An ethnographic approach is useful in finding out user behaviours, patterns and insight that would not probably be evident in more formal surveys (Miller & Slater 2000, p. 195). An ethnographic approach was used in the 1980s to study domestic technologies (Silverstone, Hirsch & Morley 1992). Research into the use of the Internet, computers and the mobile phone has generated a

variety of new ethnographic methods. In addition to thematic interviews and observations, the realities of the research can be understood through producing and interpreting, such as Internet ethnographies and computer biographies (see Henwood et al. 2001; Uotinen 2005). Also, interviews can be conducted through e-mail or virtual observation can be carried out in chat rooms (Bober 2003).

The main methods of our multimethod ethnography have been:

1. Thematic interviews: The interviews were established as the main research method, and some 1,600 were conducted between 1997 and 2007. The research sample includes teenagers, young adults, families and senior citizens from different socio-economic backgrounds. Thematic interviews were carried out as individual, couple or group discussions. Conducting a thematic interview is a developing skill that every researcher acquires little by little. In this kind of qualitative research design there is a tendency to avoid early hypothesie as they are doomed to failure; instead, the interview generally begins with a set of very general questions (Silverman 1994, p. 36; Marshall & Rossman 1999, p. 24). A research period was generally begun by carrying out some initial 'test interviews'. It is worth mentioning that the 'test interviewee' could, however, be a highly knowledgeable informant that was able to, for instance, offer the interviewer a thorough introduction into the current communication culture of young people. In the research interviews, we commonly utilized a basic framework of questions, including a variety of both more specific and more general questions. Moreover, significant changes could occur in people's attitudes and the usage patterns of mobile images in a surprisingly short space of time. Our approach to the research interviews largely resembled the notion of the active interview described in Holstein and Gubrium (1995), which is well suited to topics where the researcher is interested in subjective meanings and the interpretive constructions used by the interviewees. With the active interview, the method of sampling is described as 'experimental and spontaneous'. The number of interviewees can be increased in the course of the process as new and interesting themes emerge from the topic. In practice, as we received enough information on a certain topic, such as parents' attitudes to camera phones, we would move on to seek information on MMS communication between young people. Similarly, if we had a sufficient number of informants with a certain background, such as university students, we would subsequently invite new young adults already in working life to become part of our focus group (so-called active sampling).

2. Media diaries. We collected media diaries in order to complement the interview material. The media diaries provided more detailed understanding of media and mobile phone use situations in daily life. Later, especially in connection with the field experiments, the participants wrote test diaries on their use of the camera phone and mobile media services such as mobile TV. Through these materials we were able to deepen our knowledge of a variety of different thematic areas. For instance, through media diaries we received more precise information about young people's daily routines and media use. The diary material contained more specific details about the use of media and user experiences, which, in an interview situation, might have seemed too trivial for the respondents to mention.

3. Observation studies. The main aim of our observation approach was to catch natural behaviour in authentic situations. We followed weblogs, discussion boards, image galleries and homepages popular among young people and seniors. The method of mobile and Internet culture observation complemented the interviews and provided additional information regarding various interesting questions that had arisen in the interviews. For instance, we examined mobile image blogs and the types of communication they were used for among different age groups.

4. Photography. In ethnography, images are considered as important as any other aspects of culture. Producing photos or videos and discussing them becomes part of ethnographic knowledge (Pink 2003, p. 22). We gathered different kinds of visual material produced by the respondents. This consisted of children's drawings, photos and camera phone images and MMS messages taken by young people and seniors, and picture collages compiled by them. At the end of 2005, the visual material of the project mostly consisted of about 1,200 MMS images and videos. In 2006–2007, within the Podracing project, we asked the us ers to take some camera phone photos of the situations in which they used the mobile news services, and of other places, things or contexts that were important to them. This helped us gain an understanding of the role of mobile media in the users' everyday lives.

5. Field experiments. Mobile services are increasingly related to certain usage contexts, and may not even work in other contexts. Laboratory evaluations do

not give feedback with these products and the prototype evaluations had to be carried out in the field (Kaasinen 2005, p. 129).

In 2005 we started to carry out field experiments with key informants using 3G multimedia phones. The experiments were used to provide more detailed information on usage situations of daily life and the special characteristics of the role of image in mobile data communication. Furthermore, in 2006–2007 we carried out field tests within the Podracing project to evaluate mobile TV service prototypes and mobile TV services in their early development stages. During the field test the user used mobile media services with the given multimedia phones for one to three months. Before the test period, the users received information and instructions and tasks concerning the test.

6. Log data. The appropriate design of log functions for the evaluations is important and should be done in parallel with the technical development because it may not be easy to add the log functionality to a ready-made system. Consideration should be given to what data is needed and how the data could be automatically collected and converted into a form that is easy to analyze during the evaluation (Kaasinen 2005, p. 150).

We collected log data to reveal the time and duration of actual occurrences of mobile media service use. Log data gives specific answers to questions such as: How much the user was using the service during different days of the testing period? What times of the day was she or he using the service? During which weekdays was the user using the service? What kinds of topics was she or he reading from the service? The log data on the service use was collected from a mobile media service prototype use and analyzed statistically with the SPSS program.

4. An introduction to the themes of the publications

The main focus of this dissertation is building an understanding of the meaning of the mobile phone as a communication device and as a medium from a media studies perspective. This understanding is gained by reviewing the existing research on the social dimensions of mobile communication and the role of mobile communication in relation to other, especially so-called, new media. In addition, several empirical studies have been conducted on how people of different ages make use of mobile communication in different everyday life contexts and situations. The results of the empirical studies are presented in the following articles, reproduced here by permission. Publications I, II and IV, I have worked on together with my research collegues. Although I took the main responsibility for writing and composing the texts, the co-writers, Jussi Turtiainen and Pirjo Rautiainen, actively discussed the results and commented on the papers. In publication VII, Ville Ollikainen wrote the descriptions of the different mobile TV technologies and Carlos Herrero wrote the mobile TV systems requirement section. Elina Noppari conducted some background studies on mobile TV service uses, and Maarit Mäkinen and Antti Tammela contributed to the empirical analyses. The publications outline the development of the mobile phone as a medium from the emergence of text messaging cultures to the early adoption of MMS and the development of mobile TV. These empirical studies have been published in the following articles.

Publication I presents the role of mobile phones as part of the life of teenagers and children by the time of the 'mobile phone explosion' in Finland in 1997–2001. By that time, a cultural negotiation regarding the phenomenon was taking place among the media, families and professional educators. The relationship between children and mobile communication generated a variety of questions concerning areas such as the suitable age of acquiring a mobile handset, child

rearing, use of the mobile phone in schools and the relationship between the child and the device, to mention but a few. The use of the mobile handset was integrated into the way they manage their lives and communicate with others. However, conventions in use and attitudes to the device indicated a number of differences, and children's relationship to the mobile phone in particular appeared very different to that of teenagers and adults. The article concludes that adolescents are by no means a homogenous user group. The publication also discusses the mobile communication in families in relation to new needs connected to the organizing of everyday life; thus the mobile phone is, in part, an answer to the demands generated by new family and work cultures.

Publication II analyzes more specific features of teenagers' mobile communication cultures in relation to other new media landscapes in detail, especially to Internet-based chats. Teenagers' mobile communication is discussed in peer group and family contexts. From the theoretical standpoint provided by symbolic interactionism, we study the emergence of these new forms of social interaction. We conclude that the mobile phone is the single most important communication device in a teenager's social circle. Mobile communication has become an important means for young people in defining their personal space and how self presentation is constructed on a social stage in relation to others. Yet it appears that young people's relationship to mobile communication and to the wider sphere for communication technology is ambivalent. Young people also have reservations about the development of new technologies.

Publication III is based on empirical research and outlines authentic uses of Multimedia Messaging Service (MMS) in the daily lives of some early adopters following the launch of the service and the devices. In 2002, MMS enabling the sending of image and video messages with the mobile phone became available to ordinary mobile phone users in Finland. Various images of the use and users of MMS were represented in advertising. The future use of MMS was also anticipated from different perspectives in various experimental studies. How do different people hope to utilize these features of mobile media and what is the lifestyle profile of MMS users? The article analyses this theme by discussing earlier, experimental research on MMS use and drawing on empirical data collected between 2002 and 2004 in the projects at the University of Tampere. These projects analyze the wishes users of various age groups may have in relation to mobile media, data communication and value-added services in the near future. The study concentrates on early adopters who have themselves acquired an MMS phone. The focus is on free-time-oriented use of mobile media; work-

ing life was excluded from the analysis. The adoption of MMS is analysed in the light of subsequent developments and problematisations of the classic description of the diffusion of innovations theory by Rogers (2003). According to critics, the Rogers model views the spreading of ideas as an overly deterministic and mechanistic diffusion process; it does not take account of the active role of consumers in the adoption and definition of a product. Conversely, the social shaping approach to technology stresses the active role of adoption and definition of a product. The article concludes that the most essential decisions in this context will be made by consumers who shape the usage culture to fit their own lives. At this early stage, the use of MMS-enabled phones was closer to a 'digital wallet', i.e. a miniature photo album, than an interactive multimedia device; it was used to store pictures of girlfriends, boyfriends and pets, and occasionally to send them, but there was not yet interactivity and MMS discussions as referred in earlier experimental studies. It appeared that at this stage, in authentic, everyday situations, a new type of 'media saturation' became apparent; there are many different media applications competing for people's time and attention, such as the combination of e-mail and digital cameras, weblogs and IRC galleries.

Publication IV explores the significance of the mobile phone in the social relationships of young people and the kind of informal and formal learning strategies young people and seniors adopt in acquiring mobile phone and other ICT literacies. It appears that young age groups have long been the most active mobile phone users, but in the last few years the mobile phone use among over-60-year-olds has also been growing very rapidly in Finland and in other countries. The article presents research findings based on several research projects conducted at the University of Tampere on the use of mobile communication and the Internet among young people, families and seniors since the late 1990s. The research aimed to explore the spread of mobile and Internet trends through studying communication and social networks among young people and seniors. The main methods have consisted of group discussions and thematic interviews among young people and seniors. By 2006, over 1,500 Finns have participated in the study. The research indicated that for older generations, for whom it still constitutes a relatively new aspect of their personal histories and daily lives, the meaning of the mobile phone is highly different than for young people who have grown up into ICT citizens. Knowing the actual use contexts and user experiences of technology among different generations in their daily life can provide important insights on how to improve design and services associated with the technologies.

Publication V aims to observe the uses of visual mobile technology and the social meanings associated with it, and analyze two types of ethnographic research designs applied. In recent years, as camera phones and digital cameras have become more common, sending visual messages has become increasingly easy. Visual communication is used most importantly between members of the immediate circle: MMS creates closeness between friends and family members and adds emotion to the communication; messages are often humorous and they function to maintain and enforce relationships and social bonds. Mobile visual communication has become one of the means of communication to complement the more traditional ways of keeping in contact. For instance, the news about the arrival of a baby or a new pet is delivered immediately through MMS, whereas sending photographs in a letter was perhaps the most commonly used method before. The research group at the University of Tampere in Finland has charted developments in the use of mobile communication and the Internet since 1997. A longitudinal study over many years provides data for the observation of trends in technology use. Between 2002 and 2005, the University of Tampere analyzed the wishes that users of various age groups have in relation to mobile media, data communication and value-added services. In 2005, field experiments were carried out with key informants using 3G phones. The experiments were used to provide more detailed information on the usage situations of daily life and the special characteristics of the role of image in mobile data communication. The research mainly utilized two different types of ethnographic research design in the context of research on visual mobile communication: 1. field experiments and 2. a longitudinal follow-up study of the phenomenon through thematic interviews and observation. The article analyzes the types of knowledge that can be produced and the variety of information needs that it can be used for.

The publication concludes that one of the strengths of this kind of multi-method research is that the research in itself offers different kinds of data that can be examined side by side. In practice, comparing an ethnographic study to other ethnographic studies may be difficult as the sample of the study may consist of very different users with greatly varying levels of competence and backgrounds. The information needs of the research will determine the types of informants selected for the study: is there a more general interest in long-term trends or perhaps a need to learn about new innovative uses? When reporting the results, it is important to describe the background of the informants, as this has a great impact on the results of the study. Moreover, it is useful to include information about the informants' use of other media and other socio-cultural aspects,

such as family structure and family traditions, which have an impact on the phenomena of mobile communication as they appear in the daily lives of the researched. In other words, ethnographic field experiments should also be interpreted within a wider societal context.

Publication VI analyses the emergence of mobile video and how it locates itself between personal, community and mass media. Mobile video in 3G network phones enables the creation of personal video clips as well as viewing content made by others, making video calls to friends and family, and following different types of media content, such as news and other TV broadcasts (in real time). As the mobile phone has become capable of handling a variety of different media content, it has become a medium used for various forms of personal, community and mass communication. Furthermore, the traditional boundaries of mass communication have been blurred as different mass communication content is increasingly available to personal mobile applications. The core question lies in user appropriation: for what purposes do the users wish to use the mobile video feature in the context of daily life? The paper examines the appropriation and the significance of mobile video content and mobile TV in the everyday contexts of users. The data for the research is based on two empirical research projects that included field tests on mobile visual services, especially on mobile video calls and mobile broadcast services, at the University of Tampere and VTT Technological Research Centre of Finland in 2005–2007.

Publication VII reports on an experiment conducted with different mobile TV delivery methods and content consumption at VTT Technological Centre of Finland. While mobile TV integrates broadcast content into mobile phones, the most personal of communication devices, it becomes interesting to know how this feature will be used throughout the day and in varying contexts of everyday life. The article presents empirical results on the use of mobile TV with different delivery mechanisms and both quantitative and qualitative results on how people make use of mobile TV in different situations. The data is based on ongoing empirical research in Finland in 2006 and 2007. The mobile TV services under study included both news and entertainment content, and were tested in 3G, DVB-H and Wi-Fi networks using different delivery paradigms: broadcast, on-demand and download. To explore the use of different delivery methods and content consumption, we developed a mobile TV service protoype called Podracing. The article concludes that users appreciated up-to-date information and information-rich media forms and content, especially for mobile news delivery. There was high demand for only the latest news on mobiles. The real-time prop-

erty was considered important. Most of the users looked at the headlines or followed the news several times a day – much more often than the traditional TV and news prime times would allow.

5. Conclusion

Like the spreading of other technical and social innovations, the adoption of the mobile phones has engendered both hopes and fears. In the early years of the adoption, when the use of the mobile phone rose rapidly, there was a lot of interest in how the mobile phone would change the interaction between people and, especially, within families with children. The issues of how the everyday life and communication between people would change because of the mobile phone gained a lot of significance. In discussions, the mobile phone use by children was being both criticized and admired. Quite clearly, after purchasing a mobile phone for their child, parents frequently viewed ”mobile parenting” as a positive phenomenon and associated it with skills in organizing everyday life and caring for children.

A couple of years later, when the seniors age group, (people over 60) started to adopt mobile phones, the issues of the age groups’ specific needs appeared to gain significance. The above-mentioned themes with the different age groups are probably no longer as central as in times when the mobile phones were novelties in Finnish society. There is not much of the hype that surrounded the mobile phone in the early years of adoption left now. At the moment, the mobile phone is at the point of the technology development cycle where it has become part of everyday life, embedded in everyday activities. New themes have emerged, like the media convergence process of the mobile phone, its role in various news and world events and contextual and ambient use. The possibilities of radiation hazards have been discussed more lively in public and the Finish authorities have

given recommendations to minimize the radiation to the head, especially with children and young people.[15]

The above publications are situated within the five-year time period of 2003–2008. Even though this is a relatively short time, it can be seen as an interesting period in the development of mobile phones as hybrid media. In the beginning, there were only black and white mobile screens on the market. In Finland, the coloured screens became more common around 2002–2003. At the same time, the mobile phones with cameras became available and more developed versions of mobile web browsing were launched. The recent technical developments have extended the possibilities with mobile TV streaming. The mobile phone has evolved from a simple communication device to a real multimedia tool.

User preferences and experiences have been an important factor in the development of mobile phones as media. By this I mean that the development of the mobile phone cannot be reduced to just the increase in technical features (such as 3G and DVB-H) and the impact of the TV era, even though they are the most obvious examples of mediatization process. For instance, simple text-based SMS news, which is suited to many different situations, continues to be one of the most popular media formats on the mobile phone. In fact, the text format has been very well suited to the mobile phone in general. News and other media content in text format can provide a timely, easy-to-use and low cost service for users. Moreover, they can be read discretely, without disturbing others in public places, which is an important property for mobile services. There are many successful examples of easy-to-use mobile web versions of newspapers and journals, and even books can be podcast on the mobile phone. Moreover, many newspapers and magazines offer SMS news services.

As a conclusion, it can be argued that the mobile phone has contributed many different kinds of implications for the media landscape. In the early days of the adoption of the mobile phone it was thought that the mobility aspect of the mobile phone was the most revolutionary property of the device. However, it appears that the mobile phone has also had other kinds of impacts in the changing media ecology in relation to other media. First, the mobile phone, along with the popularity of personal computers, has contributed to the increased consciousness and idea of personal media and the emergence of new kinds of media behaviours.

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[15] STUK (Radiation and Nuclear Safety Authority) 7.1. 2009 Children's mobile phone use should be limited. (http://www.stuk.fi/en_GB/)

In many respects, consumers' media use, behaviour and expectations have been changing because of the recent developments in the media field. Users' expectations of mobile media content are high – many hope for customized services and extremely timely news, and content that is not available anywhere else. In addition, the information should be accessible anytime, anyplace – and not with high costs. Moreover, interactivity and a participatory media culture have become more important. Media usage is moving from a collective, one-dimensional and passive media use to a more personal, active and selective approach, and adopting more individual media devices – even though this may head towards increased device divergence and technical complexity.

Second, the mobile phone provides a personal, interactive link to other media. It is not only a developing tool for citizenship journalism and participatory media making but also a channel between traditional and new media. Text messaging has incorporated into television and, in some cases, also into newspapers. It can be used in more or less direct and interactive ways, like voting and commenting on current affairs programmes for The Finnish National Broadcasting Company (YLE). Moreover, the mobile phone can be used to provide a forum for reader's to express their thoughts and ideas in traditional newspapers like Aamulehti in Finland by providing a specific SMS column.

Third, it appears that the mobile phone as a personal and ubiquitous technology lowers the threshold for participating in media making. This includes participation both in social media such as YouTube and in blogs. The role of the mobile phone as a tool for digital story telling, in citizenship journalism, has become more important as the number of readers' own photographs as news material in newspapers has vastly increased. Besides news photos, the mobile phone users are increasingly sending SMS material like news tips and comments to newspapers with their mobile phones. This has especially been happening in the newspapers and departments that make local news.

Fourth, the newspaper offices and other media have to find a solution for how to act with the increasing content production from the audience; for instance, how to find the important news and verify the originality of the material. The copyright issues with amateur content producers are also gaining more significance.

Fifth, the mobile phone along with the Internet enables an additional news, information and discussion channel for the mass media. It is an instant channel for spreading news. For many news events, the information also spreads from one citizen to another via their mobile phones. For instance, in the town of Nokia's

water crisis the mobile phone was an important source of news and unofficial information along with the discussion forums provided by the newspaper Aamulehti.

Sixth, as digitalization has been one of the driving forces for the recent changes in the media landscape, the mobile phone has become a platform for downloading a variety of media content. This means that in the media production stage, the media content has to be tailored so that it can be accessed with the mobile phone and read on the small-screen user interfaces. Yet the physical user interface of the mobile phone is quite different from other mediums. It appears that it is important to discuss media as physical objects as well. Currently, there are still problems related to the immature technology, such as mobile web browsing and connectivity problems. Usability and user experience issues regarding small-screen user interfaces are particularly important. In many respects, the mobile phone is a resource-limited media platform. However, the size of the screen is not only a limitation but also an advantage in some cases as it can support the use of mobile media services in various places and situations. It enables ambient media use at home in one's backyard, in bed before falling asleep, and in other everyday contexts – in the bus on the way to work, on a train, on vacations, coffee breaks at work. Other limitations, such as battery life and network coverage problems, may have an influence on the quality of the user experience as well.

To conclude, the mobile phone should be taken as a part of examining changes in the media field and it should be considered as a medium of its own, not just as sub-media to other media. It is located between personal, social and mass media and can serve all of these purposes in different communication situations. The use of mobile phones has contributed to the change in production and media consumption, experience and behaviour. The results of this dissertation indicate that the mobile phone will have an even greater impact on the media forms of the future. The mobile phone affects the way in which media content is consumed and how users take part in content production and how they interact with media. In addition, the mobile phone as a resource-limited media platform and also as future context-sensitive media affects the way in which media content including advertising will be customized.

In spite of its restrictions as a medium, which are discussed above, the mobile phone is a modern medium because it is fast, instantaneous, interactive and personal. More likely, its role in the interactive link between the personal user and social and mass media will increase in the future.

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ARTICLE

Mobile communication as a social stage

Meanings of mobile communication in everyday life among teenagers in Finland

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Abstract

The spread of mobile communication among Finnish teenagers has been markedly rapid during the latter half of the 1990s. Young people have created and developed a communication culture that incorporates many special features, such as a rise in the use of text-based communication channels. Teenagers' intersecting and selective use of communication channels has generated multimedial communication. From the theoretical standpoint provided by symbolic interactionism, we can ask whether communication through new media technologies generates new forms of social interaction. If this is the case, how could we describe and analyse these new forms of interaction? The media landscapes created by teenagers serve to articulate their personal space, as well as enabling their presentation of self and defining their relationships to others. This article is based on thematic interview material, and its purpose is to analyse the meanings and use contexts of mobile communication and other multimedial communication culture among Finnish youth.

Key words
everyday life • family context • mobile communication • multimedial communication • peer-group relations • self-presentation • youth

INTRODUCTION

In recent years, the use of mobile communication by children and young people has become common in different parts of the world. In Finland, the expansion of mobile phone use to younger age groups began in 1997 as new, inexpensive handsets entered the market and operators introduced more competitive prices for their services. The number of SMS messages[1] sent during the first two months of 1998 was a sevenfold increase on the preceding year. The same period saw the number of existing mobile phone subscriptions double (Kopomaa, 2000). In a period of a few years, the mobile phone became an everyday appliance among Finnish teenagers. The rapid spread of the phenomenon, as well as its extent and cultural intensity, has attracted the attention of researchers. Mobile communication and the internet have implications for youth culture, the communication patterns of adolescents and the construction of teens' 'lifeworld'. The proliferation of mobile phones and new media to ever-younger age groups continues to raise new questions on the sociocultural effects and meanings of communication.

In Finland, the distribution and penetration rate of mobile phones is among the highest in the world. Currently, 91 percent of Finnish households possess at least one mobile phone. Young people have been particularly quick to adopt the mobile phone and the internet into their lives: in fact, over 90 percent of Finns aged 15 to 19 have the use of a mobile phone (Statistics Finland, 2002). The phenomenon is by no means exclusively urban: regional differences in the distribution of mobile phones are relatively small in Finland.

The spread and evolution of mobile communication and occurred relatively synchronously in many European countries. In Europe, the mobile communication of young people has been studied systematically in many countries, including Norway (Ling, 2002; Ling and Helmersen, 2000; Ling and Yttri, 2002; Skog, 2002), the UK (Green, 2002; Haddon, 2002), Italy (Fortunati and Magnanelli, 2002), Germany (Höflich and Rössler, 2002), Spain (Lorente, 2002) and France (Rivière, 2002). Although the studies vary in methodology, they allow for the conclusion that in the European context, the mobile communication cultures of young people, in particular, incorporate more similarities than national differences. The central position of text messaging and communication between friends are examples of these similarities. It is clear, however, that we are by no means witnessing a birth of a universal mobile communication culture of children and adolescents:

everyday mobile communication also contains variation resulting from family cultures and traditional modes of socialization prevalent in the countries.

The emergence of young people's mobile communication culture in Finland and other Nordic countries preceded its development in the rest of Europe. The mobile phone quickly became an everyday appliance for Finnish teenagers. Moreover, the appeal of the internet among young people has increased significantly since 1997 (Saarela, 2000); teenagers seem to be fascinated by the virtual worlds it has to offer. In 2001 the situation in Finland was no longer unique: in addition to the Nordic countries, by this time the use of the mobile phone was equally active in Italy and Austria (Statistics Finland, 2002).

The University of Tampere has been studying the mobile communication of young Finns since 1997. The research project for 2000 was called Everyday Life and Mobile Communication of Finnish Youth and Families with Children, and it focused on the mobile communication culture of under-18s in Finland. In this article we consider the meanings that young people attribute to mobile communication in their everyday lives. Based on definitions articulated by teenagers themselves, we observe the characteristics of the new technology-mediated communication from the standpoint of symbolic interactionism. The data for the article comprises 168 individual and group interviews of teenagers conducted between spring 2000 and winter 2002. The duration of the interviews varied from one to three hours. The family background of the informants, 99 percent of whom owned a mobile phone, is socioeconomically heterogeneous.

APPROACHING COMMUNICATION TECHNOLOGIES IN EVERYDAY LIFE

We look into the mobile communication culture of teenagers and related communication patterns in connection with the use of other new media. According to Kristin Drotner, young people's relationships to the media should be studied in the light of the interrelatedness of different media: '[The] "multi-media generation" apply a wide range of media and often use them together spurring new forms of reception' (2000: 167). Drotner goes on to state aptly that for the youth of today, new media are not really new. New media constitute a significant factor in young people's experience of their generation. The multimedia generation differs from the previous generation in their more extensive use of mobile communication and new media. The function of mobile communication for young people is different from adults': aspects such as the nuanced and diverse text messaging conventions and the playing of mobile games form an essential part of the mobile phone culture of teenagers. Internet-based communication channels are part of the new written communication culture of young people.

Teenagers' use of the new communication channels is intersecting and selective, and the wealth of possible viewpoints inspires them to multimedial communication.

As to methodology, it is interesting to consider the means through which a researcher can gain knowledge on people's everyday experiences in the area of communication. A research trend that began in the 1980s stresses the sociocultural context of media use, considering phenomena such as 'living-room politics', a term employed by David Morley to refer to everyday decision-making in families. In addition to media texts, this field of study focuses on the contexts and conventions of use that are particular to each communication device. In their work on the use of television in family contexts, David Morley and Roger Silverstone discuss aspects such as living-room politics and gendered attitudes to TV and video cassette recorders (VCRs) as they appear in domestic environments (Morley, 1986; Silverstone et al., 1994). Our research is best situated in this type of tradition: our aim is to bring out the communicative/cultural practices which people create and engage in their everyday environment. We find this type of 'media ethnographic' approach to methodology useful in the study of mobile communication: we observe young people's use of mobile communication as a phenomenon connected with everyday life, sociocultural environment and other media use. It should be noted, however, that this research design cannot be realised in full when each family member possesses a private and personal mobile communication device, the use contexts of which extend beyond domestic environments to a variety of public spheres. According to Morley (2002), communication technologies transform and rearrange the relations between domestic and public space. It can be concluded that mobile communication functions to broaden the sphere of the home outside the physical household.

When using 'media ethnographic' methodology, the researcher strives to understand the everyday experiences of young people in their daily use of new media and communication technologies. Jenie Betteridge (1997) stresses the fact that a researcher engaged in the ethnography of technology learns from people about their way of life. In our study, we observe mobile communication culture from adolescents' vantage points by asking them to describe the characteristics and details of the culture. The youth culture that has developed around new communication technology encompasses many features that are invisible to adults. Thematic interviews enable a better understanding of the communication culture of young people, as well as its meanings and variation as they appear in the culture and living environment of teenagers. The thematic interviews were conducted in places favoured by the young, such as cafes and fast food restaurants. These locations were chosen to minimize the possible effect of authority on the course of the interview and to get young people to discuss their lives more freely. The

interviews lasted approximately two hours, and the topics dealt with included the teenagers' everyday lives, family, free-time activities, friends, media use and attitudes to mobile communication in their immediate environment.

Aside from the interviews, various types of qualitative data were collected: observation at youth events, photographs, SMS material and drawings of fantasy mobiles. Since 1998 the research group have gathered a collection of 7800 messages and conducted a total of more than 1000 interviews. The interviews took place in all parts of Finland, in urban and rural areas. The sample has been balanced geographically in such a way that the number of participants recruited from each area corresponds to the population of the area in question.

PRESENTING THE SELF IN MOBILE COMMUNICATION

The theoretical framework provided by symbolic interactionism departs from the assumption that culture and society are based on social interaction where people actively construct their everyday reality. The interaction is symbolic: it is based on signs and meanings, and social interaction produces shared meanings. It is important to examine these signs and meanings and the forms of interaction that young people use to produce their everyday lives.

The symbolic interactionist framework rests on three root assumptions: Blumer states that human beings' actions towards things are based on the meanings that those things have for them (Blumer, cited in Denzin, 1992). Denzin goes on to conclude that the meanings of things arise from the process of social interaction and that meanings are modified through an interpretive process, which involves self-reflective individuals symbolically interacting with one another (Denzin, 1992).

Symbolic interactionism presumes that the most fundamental form of interaction is face-to-face between people. According to Mead (1972), a person's identity is completed in interaction with significant others, most often with other human beings. People learn to adapt their behaviour to their environment by adopting the role of the other. In *The Presentation of Self In Everyday Life* (1990) Goffman stresses the importance of interaction in social processes and places special emphasis on how people represent themselves as acceptable *personae*. According to him, the interaction is guided by a 'frame' that defines the signs and forms of interaction possible in that situation. We consider the mobile communication of teenagers to be what Goffman terms a 'social stage': what presentations of self do young people produce in communication situations, and what kind of a frame does communication through the mobile phone and other new media constitute?

In his discussion on the practices and methods of presenting self in interaction situations, Goffman differentiates between embodied and disembodied information. In his classification, embodied information

constitutes information that is conveyed when the body is present in the activity, whereas disembodied messages are received from 'distant bodies' in the form of letters, for example (Goffman, 1974: 14–15). Goffman does not shift the concept of disembodied information to the centre of his analysis. Yet, it is interesting to ask: what are the consequences of traditional face-to-face interaction turning into mediated communication? For example, one can raise a question on the nature of the interaction situation in the case of young people's text-based communication, where one crucial form of interaction – in Mead's terms, a 'conversation of gestures' – has been filtered out.

We can ask, from the symbolic interactionism standpoint: what is the significance of communication through new media technologies for young people? And how does this mediated communication reconstitute their relationships to their families and peer groups? How can we analyse these new forms of social interaction? Why is 'faceless' communication, such as SMS, chat and IRC, especially popular among teenagers? How do young people position themselves in relation to technology, and what presentations of gender can we read from these positions?

CONTEXTUALIZING TEENAGERS' MOBILE COMMUNICATION

For most Finnish teenagers, the mobile phone can be interpreted as an organic part of everyday life, rather than an indication of status (Oksman and Rautiainen, 2002), a fetishized object as for Japanese teens (Ito, 2001) or a fashion accessory as for young Italians (Fortunati, 2002). Most importantly, teens use mobile communication to maintain their social networks and to form new relationships. The mobile phone has become an important instrument that young people use to define their personal space. The fact that the mobile phones that teens use are their own is significant, particularly in the family context, as teenagers often experience both the communication and its contents as personal, outside the realm of parental control. The practice of teens having a fixed-line phone in their room has been relatively rare in Finland as opposed to, for example, the USA. In general, traditionally the family telephone has been located in a common space, such as the entrance hall. This means that for teenagers, the mobile phone has been the first private communication device that has enabled contact between friends outside of parental supervision (see also Kasesniemi and Rautiainen, 2002). The mobile phone is used to define boundaries and to create space in relationships with friends and parents. The mobile communication of children less than 10 years of age is markedly different from that of teenagers. The role of the immediate family is significant in the communication of children, whereas contact with peers is highlighted among teenagers.

Today in Finland, mobile phones are commonly acquired for children aged 10 to 12. Frequently, teenagers' and parents' motivations for mobile phone purchase differ. As the parents see it, a young person's mobile handset is acquired for security reasons, or in order to improve the teen's accessibility to parents. Teens may use the accessibility argument themselves when negotiating the purchase with parents, though the actual reason for wanting the device is often the desire to keep in touch with friends.

Teens struggling between independence of, and dependence on, parents wish to maintain a connection to their parents through mobile communication but may not always appreciate parents' attempts to be a part of their social space. It is for this reason that teens usually aim to limit parental contact. As text messaging is considered to be a more discreet form of communication, the teenager may ask the parents to make contact exclusively through SMS when the teen is spending time with friends. Young people on the verge of adulthood may perceive overly protective contacts by parents as disrupting their efforts to occasionally disengage themselves from the family context and the frame of interaction that positions them as children in need of parental protection and guidance.

> I get these messages, especially from my mum, like, where are you, have you got your woolly hat on you, love, your worried mum at home. That's a disgrace! It really gets to me sometimes reading: 'Are you wearing your woolly hat?' Don't expect me to answer that! It's like they're in a totally different world sometimes [laughs]. (16-year-old girl)

Teenagers frequently teach their parents and grandparents to send messages, which generates intrinsic text messaging within families: 'Unfortunately, yeah, my mum's been texting me a lot, after I taught her how to.' Teenagers perceive mobile communication as liberating due to its faculty for enabling rapid interaction with one's social network. At the same time, however, the mobile device also enables an expansion of parents' living-room politics from domestic spheres to peer-group contexts (see also Green, 2002).

> JENNI COME HOME RIGHT AWAY! DAD. (Text message, father to 14-year-old daughter)
>
> HAVING A GO AT THE HOOVER YET? MOM. (Text message, mother to 13-year-old daughter)

According to the teenage informants, mobile communication has increased freedom in their relationships with their parents. Parents do not monitor their comings and goings as closely as they did before: for example, a holiday trip with a friend's family may be allowed more easily than before. Parents, for their part, emphasize the significance of the mobile device in

accessibility and security (see Fortunati, 2002: 50). Moreover, location has not lost its significance: the routine-like where-are-you queries by parents and friends speak for an active desire to locate and position the young person.

In general, mobile communication becomes interesting around the age of 10 to 12, as children's social networks are beginning to expand outside the home to a new extent. The communication unites friends and affords an opportunity to explore the potential for new relationships. For example, the messages may constitute courtship communication intended to initiate a relationship: romantic relationships between teens frequently begin through messaging. Text messaging may be one strategy for teenagers to present their more courageous selves. The corporeal presentation of the self has been filtered out, and the communication device enables more control over the presentation of self and message content. A less than successful attempt at this type of communication can easily be passed over by referring to the playful quality of text messaging thus, to employ the Goffmanian term, elegantly withdrawing from the stage:

> Think I might have a chance with u sometime? (Text message, 15-year-old boy to 15-year-old girl)
>
> Wanna b with me?:-) (Text message, 14-year-old boy to 13-year-old girl)

Young people have acted as developers and pioneers of text message culture (see Kasesniemi and Rautiainen, 2002). Kasesniemi and Rautiainen state the following reasons for the popularity of text messaging among teens: social ease, a wider variety of possible use situations and the affordable and easy to control price-per-message. Plays on language and coining new expressions are highlighted in text messaging. A personal text message is experienced frequently as a form of communication that is more intimate than a call, and its level of privacy is seen as comparable to that of a letter. The content of a text message cannot be heard in the immediate surroundings of the recipient, as is often the case with a mobile call.

The SMS format originally intended for the informative communication of businesspeople has developed into rich emotional communication that extends from dealing with everyday matters to composing romantic notes and passing on chain messages. Spoken language expressions and plays on words are also common in text messaging, which Fortunati (2001: 314), who has studied the mobile communication of Italian youth, calls 'written orality'. Chain messages and pictures or little animations devised out of characters included in the regular mobile keypad are sent around the entire circle of friends; they contain humorous or sexual themes and are not meant for parents to see. The chain messages circulated by teenagers mock childhood heroes: the attitude functions to set the teen's world apart from that of a small child:

> MICKEY PADDED IN THE JUNGLE A PACK OF CONDOMS IN HIS HAND HE HEARD SOMETHING WHEEZY GOOFY FUCKED A MONKEY IF YOU'RE FEELING DIZZY PASS THE MESSAGE ON WHOA, TURNED OUT RATHER RACEY, SORRY! (A circulatory text message)

The spectrum of emotions expressed when maintaining social relationships is wide:

> My boyfriend sends me text messages pretty often. Not like poems or anything, but things that are romantic. (15-year-old girl)

The mobile handset is also used to fill the empty moments of everyday life: sending text messages and playing mobile games helps teenagers to pass their breaks at school and makes waiting at the bus stop a little less tedious. The sense of being connected to others remains, as the mobile phone is carried along everywhere.

Another feature of the mobile communication culture of young people are 'bomb calls', popular among the age group of 13- to 15-year-olds. A bomb call is made by letting the phone ring for a short time so the recipient does not have time to answer. As the number of the caller is stored in the phone's memory, the identity of the caller is revealed to the recipient. The number of calls received is shown on the screen of the mobile. These no-calls are made to get attention, for amusement, to save money or to communicate through a system devised for the purpose.

> Me and my friend bomb each other [in the morning] about if we'll be going to school together. It's like this: one bomb in the morning means half-past, two bombs mean twenty-to and three mean quarter-to. And if you answer with one it's yes, two is no and three is I don't know. (14-year-old girl)

Bomb calls are a social innovation based on usage of mobile communication that is not intended by device manufacturers. In the above quote, the social innovation is based on a recodification of the ringing tone through mutual agreement, on attributing a new meaning to the ringing tone between friends. Especially in the early years of the mobile boom, bomb calls were a popular phenomenon among young people. By 2002, the use of bomb calls had diminished significantly among 13- to 18-year-olds: pre-teens were still actively 'bombing' their friends, but older teens tended to perceive this as childlike usage.

TEEN'S PERSONAL MEDIA LANDSCAPE AND THE IMAGINED OTHER

> What is being created is new electronic cultural space, a 'placeless' geography of image and simulation. (Morley and Robbins, 1995: 112)

Kristen Drotner writes: 'Significant developments in today's media culture often seem to take place in the interaction between media rather than within individual media themselves' (2000: 162). Mobile communication practices can be understood through observing them in relation to other forms of communication that are commonly used among young people, such as online chat and IRC. Fornäs (1995: 27) differentiates between what he calls 'macromedia' and 'mesomedia'. He uses the term macromedia to refer to an established producer of cultural texts, and describes mesomedia as 'niched products circulated locally or within alternative public spheres, with a less sharp separation of producers and consumers'. A typical instance of mesomedia is the digital media, such as the various discussion forums on the internet. Today, young people in industrialized countries live in a world where the phenomena of new media culture have an intensive presence: it is characteristic to use communication channels as means to self-expression. Some teens are particularly active in the field of content production and perceive mesomedia as a familiar tool. Furthermore, mobile communication and new media (e.g. chat, IRC[2] and newsgroups) as forms of communication tend to reduce the traditional opposition between producer and recipient of media texts: the roles of consumer and content producer cross paths and, in some cases, overlap.

Young people have been considered to occupy a special position as the adopters of new forms of media and developers of different usage cultures (Drotner, 2000). 'Youth' as a cultural concept has been linked to change, new cultural phenomena and susceptibility to influence. The question of young people's relationships to media is central in youth research. The tone in discussion of the matter has varied over the years: some have perceived adolescents' relations to media as cause for moral panic (Boethius, 1995), while for others, young people's status as pioneers of new media gives rise to hope for the future (Fornäs, 1995). In Finland, the moral panic connected to mobile communication has manifested itself in the media as stories of teenagers' excessive mobile phone bills.

Teenagers' media landscapes are built on the interaction of different media and different technologies. The youth of the multimedia generation construct their personal media landscapes by choosing their favourite TV series, films, music, websites, chat sites and computer games from the selection offered by different media. Young people select the elements that best suit their own lives and thus allow media to furnish their lifeworld. With increasing frequency, face becomes interface, and forms of mediated communication assume an increasing significance in the everyday lives of teenagers. In everyday communication situations, teenagers continue to engage in face-to-face (F–F) contact, but owing to the use of new communication technologies, face-to-interface (F–I) communication (such as playing computer games or watching TV) and face-to-interface-to-face

(F–I–F) communication (e.g. IRC, SMS chat on TV, text messaging, internet games) are also common. These new forms of communication have become a constituent part of everyday interaction.

The use of the mobile phone is connected to the use of other media, in communication and in information-seeking. For example, young people may substitute the mobile phone for other media. It should also be noted that teenagers often have different uses for different media: a teen who reads the newspaper to gain reliable and accurate information may be likely to utilize electronic media, such as teletext and the internet, to find quick individual bits of information or to compare different viewpoints.

> Most of all I think we send email, and after sending email we send SMS from the web to let the person know they've got mail, so they can go and check it and reply to it. In the MTV3 [a Finnish TV channel] teletext they have this thing that if you send them a text message they display it on one of their pages. I have sometimes sent messages there, just that I've wanted to say I'm sorry to someone in a really nice way, so I've sent them a text message to read in teletext. Then I've told them to check the page on teletext. (17-year-old boy)

Teenagers base their selection of a communication medium on how appropriate the medium is to the use context and how private they consider the content of the message to be. For example, they value email as it enables private discussion, which in some cases may be impossible in everyday interaction.

> It's just easier somehow, when you know there's no one else there. Whenever we see each other, there's always a bunch of other people around. We can write about her having problems with boys or me with girls, things like that by email. (16-year-old boy)

The communication culture of IRC channels is considered to be more specific than the culture of chat sites, as the use of IRC presupposes familiarity with the conventions of text-based conversation. In chat, the company and topics are more random and the communities less cohesive than in IRC.

The virtual world of teenagers may be difficult to understand for people belonging to a different generation. A middle-aged man, for example, approached the research group with his presumption that radiation emitted by the mobile phone affects children's memory. A more plausible explanation for the air of distraction of mobile-using children would be that, while absorbed in their use of the phone, they are engaged in a virtual reality and as a result are momentarily less receptive to stimuli from the surrounding reality. Thus, a generation gap can be perceived in the density and focuses of the media landscape: in the lives of young people, the

presence of the media landscape is more intense and its main focus is on the internet and new media.

The use of new media also enables a process of virtual acquaintance that proceeds in stages. In the exploration phase, conversation takes place through internet-based communication channels and enables the communicators to maintain their anonymity. As the acquaintance deepens, the two may decide to move on to communication that enables them to identify each other.

> There was this girl, I met her about six months ago in chat. We talked for about an hour first and then exchanged numbers. Then we sent SMS for quite a while and then met a few times, and now we're pretty good friends. (15-year-old girl)

The text-based discussion channels on the internet enable adolescents to sound out the congeniality of different people. When internet-based communication is not available, teens substitute the mobile phone for other media.

> When we go sailing [with the family] I tend to use the mobile a lot, cause I often give my number to people from the net. When I can't chat on the internet, which is cheaper, I use the mobile to SMS with them. (14-year-old-girl)

In this hectic quest for congenial spirits, teenagers may make simultaneous use of a number of different channels.

> I go to IRC and ICQ[3] at the same time, and people who are in ICQ never visit IRC, so I talk to different people on ICQ and IRC. I can be on different IRC channels at the same time and be in an awful hurry to write to all these people. (16-year-old girl)

Some may perceive the virtual community as more interesting than face-to-face interaction. F–I–F (Face–Interface–Face) communication may also be considered as providing a better opportunity for controlling the content of communication as it lacks the entire visual aspect of communication, such as gestures, body language and clothing, and enables communicators to interact through their thoughts alone. However, the absence of visual information may lead to the emergence of an 'imagined other': people feel the need to create some mental image of the person with whom they are communicating. The imagined other may often be an idealized image, and meeting the actual physical person behind the image may prove surprising.

> It was actually a bit scary meeting him [a friend from chat] for the first time. His voice was all harsh and he was a lot taller than I had thought. (14-year-old girl)

In the communication culture of young people, the F–I–F communication enabled by new technologies seems to play a significant role alongside other, more traditional forms of communication. The popularity of F–I–F communication among young people can be attributed to factors such as the opportunity to create new contacts and the leeway that this type of communication provides in terms of self-presentation. F–I–F communication is often intensive in nature and may appear incomprehensible to outsiders.

The communication cultures of young people may involve local groups. In a small town in central Finland, IRC had become a popular pastime. Several close circles of friends would often spend time in their old school building using IRC. An outside observer found it curious to witness dozens of small town teens conversing with each other via computers:

Interviewer:	I've heard that IRC is really popular here?
Girl:	Yeah, my brother goes to these IRC groups, they have actual gatherings, they go to some old school and they have a mass of computers with them, I suppose they go drinking there as well.
Interviewer:	Is it always the same group, are they all boys?
Girl:	Well yeah, I don't suppose they'd even have girls in there, it's quite heavy duty, girls would run off screaming. (15-year-old girl)

In their speech, some of the teens highlight intermediality and mastery of different media, the multimedial character of their everyday lives. A more detailed empirical analysis would indicate that the rhetoric of ICT mastery affords a somewhat one-sided picture of the role and significance of new media in the lives of the young generation as a whole. The use of ICTs is organically linked to social communities as well as everyday communication practices and needs. In fact, young people's fascination with virtual worlds and their attachment to them may not be as lasting a phenomenon as the apparently more solid marriage between mobile communication and everyday practices. In a period of two years, it seems that for many teenagers the significance of the internet use had undergone a change: intensive use of IRC or chat is a passing phase of life. In 2000, 14-year-old Julia was an active visitor at chat sites that were popular among young people. In 2002, her attitude to the virtual worlds of the internet had changed. When asked about her current position with regard to online chat, she exclaimed: 'Ugh, I really couldn't care less.' In 2002 it was evident that a general suspicion towards meeting strangers on the internet had increased. Girls in particular were on their guard against unwanted approaches and internet harassment. Some stated that they preferred to meet people they already know (e.g. friends from school) or to communicate within a small, relatively closed circle. Roosa (a 15-year-old) talked about going to meet

her friends at virtual meeting places while remaining reserved about approaches by strangers:

> They just come up to you and ask [in the virtual meeting place Habbo Hotel Kultakala]: 'Where do you live? What age are you?' You can't say anything to them since you don't know who they are, when sometimes it can be men in their thirties or something. I don't say anything to them, just bye and see you around.

More than different forms of internet communication, mobile communication has become rooted in the everyday communication practices of young people's immediate environment. Even though the constant presence assumed by online culture may seem like a burden sometimes, the most typical comments uttered by young people to describe their relationship to the mobile phone highlight the necessity of the device and its natural, almost organic niche in everyday life. Many feel that, having stored the numbers of the people who are most important to them, carrying their mobile phone allows them to take with them their entire social community wherever they go. A 16-year-old daughter of a family living apart described the mobile phone as an instrument that unites them:

> The mobile is really important for me and I take really good care of it. It's like my whole life in the palm of my hand. I save all the important messages. My dad sent me a text message three minutes into the New Year. I often bomb my parents and then they call me back. I don't see my dad so often, but he sometimes gives me a call just to ask how I'm doing. My big brother sometimes sends me funny messages that we get a good laugh from, especially if I'm with my friends. And I'm in contact through the mobile with my half big sister a lot.

New situations inside the family, such as divorce, one-parent families and the forming of stepfamilies place demands on organizing everyday life. The mobile phone is used to narrow or bridge the gap between family and working life: contact between family members remains, even when the parents are at work. The role of the mobile phone in the arrangements of everyday life and its position as a central element in communication between friends and family members makes interaction through the mobile phone a form of communication that is more grounded socially than the virtual encounters of the internet. The mobile phone can even serve to unite a 'dispersed' community: it can function as 'social adhesive' between family members (see also Fortunati, 2002).

PERFORMING GENDERED SELVES

The material indicates that both boys and girls have adopted the mobile phone equally. According to Statistics Finland in 2000, 77 percent of Finnish teenagers aged 15–19 had a mobile phone at their disposal, and the statistics

showed no differences in mobile ownership between the genders in this age group. In the age group of over 30-year-olds, men use a mobile phone more frequently than women. The differences here are in the range of 10 percent, and the percentage increases in older age groups (Nurmela et al., 2000). In 2002, however, an opposite tendency can be detected: in the youngest age groups, the use of the mobile phone and the internet is clearly more common among girls than boys.

The cultural meanings attributed to the device are a part of the social stage where young people construct meanings of themselves and others. Outside of actual communication, young people's self-presentation occurs through choice of the device and attachment of symbolic meanings to it. It is interesting to reflect on the gendered interpretations that young people construe with regard to certain uses of technologies: through what kind of attribution of meaning does a certain technology or its usages acquire a gendered nature, and how and when are these processes altered?

For young people, mastering new communication technology has become the norm, especially for young boys when adopting masculine identity. A 17-year-old male sixth-former describes the importance of remaining up-to-date with technology: 'You have to keep up really, if you want to make it in this world.' Gender differences can be detected in both the teenagers' use of the devices and their attitudes towards them (see Brosnan and Davidson, 1994; Håpnes and Rasmussen, 2000a; Oksman, 2002, Skog, 2002). According to teenage informants, girls' messages are longer and they send more of them, while boys express themselves more briefly:

Girls just like to talk more and boys just send real short messages. See you there then and that type of thing. (15-year-old girl)

Although actual technology phobias are rare, girls express more reservations about developments in technology and the appliances produced by it. Attitudes range from interest to reservations, or a passive tolerance of the presence of technology where it has very little personal significance in the person's life. In relation to technology, the majority of teens position themselves as 'ordinary computer users': they do not stress an affective relationship to technology but perceive computers as 'just tools'. This may contradict the cultural view according to which all young people eagerly adopt all new products, regardless of their gender.

In the early stages of the study in 1997, often mobile phones were seen to possess a technological, masculine air: their functions were perceived as somewhat difficult and requiring a certain amount of expertise. In this situation, boys were more interested in the devices and also owned them more frequently. Perhaps the most obvious difference was that boys carried their phones visibly on their belts and compared models, whereas girls tended to carry their phones less conspicuously: the mere knowledge of the

existence of the device was sufficient for them. One 14-year-old girl described the differences in girls' and boys' attitudes to the mobile phone:

> Boys want technological gadgets. They go around with a mobile on their belt, as if to say, look I've got a mobile. If a girl has a mobile, she's got it in her bag.

During the first years of the phenomenon, girls were uncomfortable with the appearance of the devices. Later, after the launch of smaller phone models and the addition of SMS as a standard feature in mobile phones, girls quickly developed an interest in the use of mobile phones. They would paint their mobiles with nail polish, embellish them with stickers and make carrying pouches that matched their clothes. This type of activity can be interpreted as an attempt at appropriation of technology: to detach technology of its seriousness and afford it a personal appearance which matched the owner's individual style.

> Interviewer: When did you paint the covers?
>
> Girl: A couple of months ago. Then last night I changed the colour as I was varnishing my nails. (15-year-old girl)

However, it may be useful to consider whether communication technology really is a place where new performances of gender are constructed. In light of empirical research, it would appear that traditional gender assumptions remain present when dealing with new technology. Technology optimism is more characteristic of boys:

> It [technological development] has been quite amazing in the 1990s in Finland, and it's good that it's been fast. (15-year-old boy)

Boys are more interested in keeping up-to-date with technological innovations and developments in mobile communication technologies. Frequently, they view communication technology as an instrument in the management of everyday life, as a tool for regulating and controlling one's environment. Girls continue to be more interested in the interactive and aesthetic features of communication technologies. They are more interested in communication technology which enables contact with geographically-distant people (see also Håpnes and Rasmussen, 2000b). Girls' fears are directed primarily towards computers and the internet. In addition, rapid or extreme technological developments often intimidate them. Some are of the opinion that new technologies alienate and isolate people:

> It's no wonder about people becoming lazier and lazier, when you may as well lie in bed with your mobile and key in all sorts of stuff, you don't have to move or think, just keep on pressing the buttons. (17-year-old girl)

Some raise the question of communication technologies becoming too complicated, as is shown in this extract of conversation between 17- and 18-year-old girls:

> Girl 1: Not everything can be developed to the max, man's reason just isn't enough for that. And what use is stuff we don't understand?
>
> Girl 2: I have a feeling all the computers are going to go on the blink soon, they're just too souped up, I think these technological communication devices are going too far.
>
> Girl 1: I feel mobile phones are becoming too fancy. They start acting up 'cause they're too souped up.

Teens know how to react to the questions in line with gendered expectations. Boys do not like to report deficiencies in their technical skills, inability to master the devices or fear of technology. With years of experience in using computers, many girls still feel they have not mastered the use of computers and the internet. The traditional a-technological female identity is visible in the way in which some girls present themselves in relation to communication technologies:

> I'm a complete idiot with computers . . . I know some basic stuff, like how to turn it on, but I don't know how to get to the internet. (18-year-old girl)

CONCLUSION

According to Finnish youth, the mobile phone is the most important communication device in their everyday lives. Through it they manage their affairs and anchor themselves to their immediate social circle: their friends and families. Young people's relationship to mobile communication and to the wider sphere for communication technology is ambivalent. With mobile communication as an important social adhesive, young people also display an interest in the phantasmic encounters of the virtual world. In the light of our analysis of the data, we can conclude that the use of chat and IRC are connected with the process of socialization and becoming independent. A group of friends that have been intense IRC users a couple of years ago may since have adopted a disparaging attitude to all online chats.

A central factor in mobile communication between young people is the integration of the communication into one's own lifeworld and the construction of a social identity: it is used to define who belongs to important social communities and how self-presentation is constructed on a social stage in relation to others. Mobile communication has become an important means for young people in the definition of their personal space. The contents of young people's mobile communication are very similar in different parts of Europe: with the help of mobile communication, young people build their own social networks and define boundaries in their

relationships with parents. For teenagers, text messaging is a quiet and simple way to maintain their social network without their parents' knowledge. Mobile communication is connected to the use of other media in important ways. Elements hand-picked from different media form into media landscapes that are particular to each teen. The media thus functions to furnish the lifeworld of teenagers. The media landscapes serve to articulate young people's personal space, identity and relationships to others.

Nonetheless, teenage identities are not free-floating in the media landscape. Gender has not lost its relevance, and other subject positions have not dissolved into virtual reality. Attitudes to new communication technologies are gendered and generational. Girls frequently have more reservations about the developments of new technology than boys.

One central aspect of the new communication cultures of teenagers is the rise of text-based communication. A possible explanation for the phenomenon can be found in the opportunity that F–I–F communication provides for controlling 'face-work', for the presentation of self in the company of others. The interface diminishes geographical distance and produces an electronic space where communication can take place. Communication of this kind always involves the possibility of withdrawing from the stage. It also provides the communicator with a facade enabling communication and presentation of self that are considerably different from what is possible in face-to-face situations. Yet it is typical of F–I–F communication to produce, as Erwin Goffman (1974: 14–15) puts it, disembodied information, to manufacture an imagined other that may constitute a dreamlike image of the person contacted: fantasies, hopes and images conjure up qualities where there is no physical being to provide the information. In light of the theory of symbolic interactionism, it is possible to pose further questions: is the need to get information on the person with whom we are engaged in significant communication somehow characteristic of humans? Text-based communication is one form of communication among many others, and as such serves to reshape our opportunities for social communication and the presentation of self.

The new forms of mediated communication favoured by young people are based on F–I–F communication: the communication is filtered by the communication device. Many teenagers display a tendency to humanize technology in their speech (Oksman and Rautiainen, 2002). The meaning of the mobile phone is constructed through the way in which it connects its owner to a community of friends, making it easier for the person to be in touch with the social network. Frequently, teens see the mobile phone as symbolically representing the community to which they belong, be it a group of friends or people united by a common hobby. It is also common for young people to attribute human qualities to the phone and to think of it as having an 'electronic life' through which it unites circles of friends.

Notes

1 An SMS (Short Message Service) message is a text-based message that can be sent from a mobile phone or from the world wide web to another mobile phone. The maximum length of an SMS message is 160 characters. Newer handsets enable the sending of messages of up to 500 characters.
2 IRC (internet Relay Chat) is a real-time discussion system that enables users to interact with individual or groups of users on different channels simultaneously.
3 ICQ ('I-Seek-You') is software that can be downloaded free from the internet. ICQ provides its users with information on whether the persons they are seeking are currently logged on the internet.

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Publication III

MMS and its “Early Adopters” in Finland

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MMS and Its "Early Adopters" in Finland

In 2002, Multimedia Messaging Service (MMS) enabling the use of image, video, colour, sound, and animation on the mobile phone became available to ordinary mobile phone users in Finland. Various images of the use and users of MMS have been represented in advertising. The future use of MMS has also been anticipated from different perspectives in various experimental studies. Based on a research study, this paper outlines authentic uses of MMS in the daily lives of some early adopters following the launch of the service and the devices. How do different people hope to utilize these new features of mobile media and what is the lifestyle profile of MMS users?

Between 2002 and 2004, the University of Tampere analyzed the wishes of users from various age groups in relation to mobile media, data communication, and value-added services in the near future. The study concentrated on early adopters who had independently acquired an MMS-enabled phone. The focus was on the free-time-oriented use of mobile media: working life has been excluded from the analysis.

The approach of the study was ethnographic. Thematic interviews were conducted with some 300 people. Other methods utilized included the photography and observation of the use of mobile media in various situations, as well as analysis of the material produced by the study subjects, including user stories, MMS material, and digital photos.

Research and Assessment of the Future Use of MMS Communication

A number of expectations and possibilities have been associated with visual communication through the mobile phone. The use of MMS-enabled phones and devices that anticipated the use of the mobile image has been studied in Finland mainly by means of experimental studies, in which the research subjects were usually given an MMS device to use for a certain period. The respondents then used the devices according to instructions, but did not themselves have to cover the costs incurred by the usage.

For this reason, experimental studies do not outline the authentic market situation, but anticipate possible future usage situations in the everyday lives of people.

One of the earliest studies in Finland using this type of experimental research design was *Mobile Image* by Koskinen et al.[1], based on an experiment organized in the early 2000s. Each participant was given a digital camera and a telephone that enabled the sending of digital photographs. The picture-taking, sending, and receiving activities of these people were then observed over a period of some months. Personal interaction and entertaining friends through telling stories of one's own life emerged as the main functions of the mobile image. The study presents visions of how the use of mobile images is informed by experience, image-storytelling, and jokes. Koskinen et al. estimated that the mobile image would not be very suitable for utility purposes: it was used to communicate experiences and immediate feelings. In particular, the telling of stories through a series of combined images is a powerful theme highlighted in the data. The test subjects used mobile images to tell stories related to their life situation and current feelings. The stories could also be re-enacted and often contained references to popular culture such as, for example, horror films. Most commonly, the messaging was witty, humorous, and contained teasing. Themes started by one person would sometimes continue into a longer series: for instance, a group of women began by sending each other pictures of their boyfriends and ended up exchanging images of the men naked.[2] Koskinen et al. estimated that, in a sense, the mobile image would continue traditions established with the traditional image, but they anticipate that it may also generate a phenomenon of "disposable imagery": pictures that are so situation-specific that they have no long-term use.

> Mobile visual messages introduced to communication characteristics emphasized in postmodern discourse: transience and reacting to a previous message without questioning its assumptions. Mobile visual messages reinforce this development. Images get outdated in just a few days unless they contain a story or obvious aesthetic value, for example.[3]

The report *Mobiili video* ("Mobile Video") by Repo et al.[4] sets out in search of ideas regarding situations where the possibility of viewing video

[1] I. Koskinen, E. Kurvinen and T.-K. Lehtonen, *Mobile Image*, Helsinki: IT Press, 2002.

[2] *Ibid.*, pp. 67 ff.

[3] *Ibid.*, p. 120.

[4] Petteri Repo, Kaarina Hyvönen, Mika Pantzar and Päivi Timonen, *Mobiili video* ("Mobile video"), series *Kuluttajatutkimuskeskus julkaisuja*, Helsinki: Kuluttajatutkimuskeskus, 2003.

through the mobile phone might be useful. The researchers gave mobile phones equipped with a video player feature to persons of different ages, who then viewed videos in various everyday situations. The users did not themselves create the content of the videos; they were ready-made, including music videos, children's animations, and sports videos.[5]

The study assessed the potential future use of mobile video as being relatively moderate. For instance, viewing on public transport was conceived of as unsuitable. The users were wary of attracting unwanted attention through the use of an unfamiliar device, or concerned about disturbing fellow passengers with the noise. The users talked about the novelty wearing off: initially, the new device was fascinating, but some quickly grew tired of it in one day.[6] The research was designed to highlight the adoption of new viewing patterns and the identification of potentially pleasurable viewing situations. According to the study, there are at least two types of situations in which the use of a mobile video phone seems natural. First, users can entertain themselves in boring situations such as a bus trip or while queuing in a store. Second, mobile video offers an opportunity for the sharing of experiences through, for instance, a karaoke video or cartoons for children.

Another report, *Elävän mobiilikuvan ensi tallenteet* ("The First Captures of Living Image") by Kasesniemi et al.,[7] is based on a field experiment designed to examine users' experiences with video communication. In this study, some of the participants were already owners of multimedia phones and others were given MMS-enabled phones to use for the purposes of the research project. Many were beginners in the field of MMS communication and had never sent an MMS message before the study. The study presents different situations of everyday life and discusses communication between family members and friends. Also included in the sample were people sometimes considered as atypical from the viewpoint of MMS-enabled phone marketing, such as mothers and senior citizens. A female (34) respondent talks about how she does not feel she is part of the target group of MMS marketing:

> *I don't think I'm quite in the number one user group, even though I would probably fit in exactly for my age: urban, busy lifestyle, upper-middle class, someone who's*

[5] *Ibid.*, p. 10.

[6] *Ibid.*, pp. 12–13.

[7] E.-L. Kasesniemi, A. Ahonen, T. Kymäläinen and T. Virtanen, *Elävän mobiilikuvan ensi tallenteet: Käyttäjien kokemuksia videoviestinnästä* ("The first captures of living mobile image: Users' experiences of video communication"), VTT Research Notes 2204, Espoo: VTT, 2003.

relatively well-off and in charge of one's own life... It's kind of a modern, urban way of thinking, quite a masculine world. I can't really relate to that.[8]

The report observes that users are concerned about public media use annoying others. One of the women participating in the study discussed the use of camera-phones in public places: "You would try to be really quick about it, so that no one would notice." Different users produced very different materials on mobile video and camera functions. Recurring themes also appeared in the data: For instance, an image of a pizza sent for the purpose of suggesting a lunch date in a pizzeria could be replied to with an image of a microwave dinner: "Unfortunately I'm going to have to settle for this today." Several references to popular culture were also detected: for instance, respondents produced their own music videos. The report also features different forms of mobile video communication developed by the users, such as "remote visits" (relatives living farther away receiving the most recent news in the form of a video), or "live postcards" (a practice of sending, for instance, MMS images of friends or family members or amusing details in one's environment as Valentine's Day greetings).[9]

The analysis of the future of MMS communication provided in the Kasesniemi et al. report is quite optimistic. The report indicates that mobile video has potential for seamless and versatile fusion into the mobile communication and life management of users. Users generally perceived video as a good medium for communicating feelings and events containing a lot of movement. During the test period, the use of the video function varied from documenting personal memories to directing small humorous clips. Some of the captures were forwarded to other users, while others were intended for personal use alone and stored either in the mobile terminal or on a desktop computer.

Problematizing the Diffusion of Innovations

The above-described studies employed mostly experimental methods and thus mainly focused on situations where the people selected as subjects had been given MMS devices to use by researchers. In an authentic situation, the adoption of the devices is affected by a number of different variables, such as the price of the devices, the objects of interest of different user groups, and general cultural attitudes to the devices. Analysis of an authentic situation enables one to observe in more detail what kinds

[8] *Ibid.*, p. 44.
[9] *Ibid.*, p. 65.

of people become interested in new devices, what types of lifestyle profiles are associated with the use of the devices, and how the devices are proliferated through the users' social networks. This is a much-debated topic, covered, for instance, in subsequent developments and ramifications of Everett M. Rogers' classic description of the diffusion-of-innovations process.[10] According to Rogers, new innovations spread in social networks according to the following pattern:

innovators ⇒ *early adopters* ⇒ *early majority* ⇒ *late majority* ⇒ *laggards*

Rogers' classic idea of the "adoption curve" is widely used by different diffusion scholars, but it has been also subjected to criticism. The critics have pointed out that the model views the spreading of ideas as an overly deterministic and mechanistic diffusion process: it does not account for the consumer's interpretations of meanings or for situations specific to the various contexts of daily life.[11] Conversely, the "social shaping" approach to technology[12] stresses the active role of consumers in the adoption and definition of a product. According to criticism, Rogers' model also places too much emphasis on the choices and characteristics of individuals and thus fails to consider the fact that most innovations are in fact social in nature. Ilkka Tuomi stresses a more social understanding of product functionality and sees product meaning as grounded on social interaction. Tuomi states that innovators (and innovative-user communities), while concerned with their own interests, often "misuse" technology, which in itself often leads to the evolution of product concepts.[13] As to the product lifecycle of camera-phones, I wish to draw a line between innovations created by consumers and those spawned by the industry. The term "innovators" can be used to refer to professional developers of new technology, but it can also be seen to apply to people thinking up new ways to use or develop a product or idea in their daily lives. Although the line between

[10] Everett M. Rogers, *Diffusion of Innovations*, 5th ed., New York: Free Press, 2003.

[11] T.-K. Lehtonen, "The Domestication of New Technology as a Set of Trials", *Journal of Consumer Culture*, vol. 3, no. 3 (2003), pp. 336–337; Richard Ling and Per Helmersen, "'It must be necessary, it has to cover a need': The Adoption of Mobile Telephony among Pre-Adolescents and Adolescents", presented at the conference on the social consequences of mobile telephony, 16 June 2000, Oslo, Norway, see http://www.telenor.no/fou/program/nomadiske/articles/06.pdf, p. 4.

[12] W. E. Bijker and James Law (eds.), *Shaping Technology / Building Society: Studies in Sociotechnical Change*, Cambridge, MA: MIT Press, 1992.

[13] Ilkka Tuomi, *Networks of Knowledge: Change and Meaning in the Age of the Internet*, Oxford: Oxford University Press, 2002.

innovator and early adopter may sometimes be blurred, in this article I use the term "innovator" to refer mostly to people who develop MMS-enabled phones as a part of their work. The group of early adopters can be seen to consist of those who purchased and used a camera-phone between 2002 and 2003.

Wherever the Rogers' model is applied, adoption is often understood as a rational decision-making process where the individual makes conscious choices to either accept or reject based on rational grounds. In practice, the actions of people can also contain ambivalence, insecurity, impulsiveness, and discontent, and these feelings may also play a part in the consumer choices of innovators and early adopters. Consumer decisions may sometimes be largely based on emotions and impulse. Consumers might also purchase a device for the "wrong" reasons: for instance, WAP phones were often bought not so much because of their WAP feature, but because of their large displays. Sometimes, the new feature can be acquired as if by accident, as a side product. For instance, Oiva (68) had in fact been planning to purchase a GPS positioning phone for his fishing trips, but ended up surprising himself with the purchase of a camera-phone.

R: *I saw this advert in the paper one day, about a new phone, it has everything you might need. So I went to the shop and they gave me a bit of a presentation.*
I: *How did you decide to get a camera-phone?*
R: *It just somehow came along.*

The adoption theory should not be applied in too narrow a sense. The reformed version draws more attention, for instance, to social changes.[14] This article approaches the problem of the distribution of innovations mainly through observing users' lifestyle profiles, attitudes to communication, and meanings they attach to use.

Cultural Attitudes in 2002

The aim of our study was to gain a better understanding of the authentic situation in the daily lives of users of different ages. When we began to assess consumer attitudes to camera-phones in 2002, the first MMS devices were fresh on the market. Though both device manufacturers and service providers were running extensive marketing campaigns on the products, people still lacked the knowledge of what the devices were and how they functioned in practice. All age groups were more or less in the dark

[14] Rogers, *op. cit.*, p. xix.

about the functions of the camera-phone. It was commonly conceived of as the video phone familiar from science fiction, in which it was impossible to switch off the real-time video connection between the communicators. Young people, too, envisioned situations where they did not want to be seen by the person at the other end: "It wouldn't be nice to have to worry about your hair all the time", "What if you're on the toilet when the phone rings?" The functions of the new device remained unclear to many adults as well: the MMS-enabled phone was even often confused with the internet.

Commonly, the notion of merging camera and phone was perceived as awkward and criticism was raised. The researchers were often asked the question: "Why can't you just have a camera and a phone separately?" The interviews also indicated that people were not yet culturally accustomed to the thought of a multimedia phone. Also, the use of the new device as part of one's everyday life appeared as a distant notion.

I: *Have you heard about the new picture-phones, about how they function?*
R: *No. I can't think of anything right now.*
I: *Could you see yourself using one?*
R: *Well, no. It belongs to these extra functions, so no. No. Makes me think about a video-phone or something, if it is the same thing. What can you see in the picture? How do you look at it? Is it like a computer or?*
I: *What's your image of it?*
R: *When I think of video-phones, what I think is that you get to see the other person, the one who's talking to you.*
I: *What do you suppose you could do with a picture-phone?*
R: *The first thing that comes to mind is that it has a computer screen or a screen and that you can surf somewhere with it. That's all I can think of.*
I: *How would you imagine the picture?*
R: *You mean what the image is on the screen? I suppose it's a bit like the internet.*
I: *Real-time?*
R: *Yeah, something like that.* (Woman, 40)

The level of interest in the MMS-enabled phone varied greatly between families and individuals. Some saw it as an unnecessary luxury, while others considered it an interesting form of communication that in some situations might be more efficient than speech. The respondents anticipated a range of different situations in which the phone could come in useful, for instance when shopping or keeping track of the whereabouts of teenaged children. The image feature engendered the most criticism among middle-aged respondents with families. Parents were frequently of

the opinion that privacy issues would constitute a part of the problem of mobile photography. One of the main concerns that Finnish people had regarding the mobile camera-phone was sneak-photography.[15] The problem arose mainly from the possibility of unobtrusive use of the essentially hidden camera of the MMS-enabled phone. In our study, parents stressed that people do not always want to be taped or photographed: for instance, in one family, the children did not want to attend a certain girl's party because she always insisted on videoing parties, which invariably functioned to flatten the atmosphere and dampen spirits.

R2: *You don't get a moment's peace. If you go to a bar or a pub or anywhere, there's always someone snapping away photos and sending them on. You don't get any privacy.*
R1: *When I think about young people today, there's certain quite heavy ethical problems. ... It's the same thing with the girls Ella's age struggling over whether or not they can have a party at someone's house since there's this one girl who always appears with a video camera and tapes everything. So the ethical question is there, and it's the same thing with the picture-phone.*

Competing technology often plays a significant role in the diffusion of innovations. Consumers clearly perceived the digital camera as a rival to the camera-phone. Comparisons were made between the devices with the conclusion that the quality of MMS pictures was deemed inferior.

We've talked about this at work, but up until now at least the talk has been more on the digital camera and sending pictures through e-mail, more than on the picture-phone itself. For the moment, the main problem is the poor quality of the pictures, but yeah, I believe that it'll become common practice in the future. (Father, 42)

Particularly among respondents that were over 40 years old, many felt that the MMS advertising was not targeted at them but at some other segment of consumers. Some were of the opinion that MMS advertising concentrating almost exclusively on fun and entertainment was neither inspiring nor appropriate: such an expensive device should have uses other than mucking about.

R1: *It's been based on jokes mostly, it hasn't really been ...* (R2: *Bit of an odd choice*

[15] Anne Soronen and Veijo Tuomisto, "Mobile Image Messaging: Anticipating the Outlines of the Usage Culture", in Fabio Paternò (ed.), *Mobile Human–Computer Interaction* (Mobile HCI 2002, Proceedings of 4th International Symposium, Pisa, Italy), Berlin: Springer Verlag, 2002, p. 360.

maybe.) At least so far they haven't tried to advertise it for any actual serious use. It's been all about the joke department so far.
I: *Is that positive or negative?*
R1: *In my opinion it's probably diminished the appeal somewhat.*
R2: *Makes you wonder since it's a really expensive device, to just use it for something like that.* (R1: *To mess about.*) *That's right.* (Father, 42 and mother, 41)

Early Adopters in 2003

By 2003, people had grasped the idea of the MMS-enabled phone: it was no longer confused with the internet. Advertising and wide press coverage had familiarized consumers with the device. It was understood that the device enabled the sending of images and video messages, but by then it was rarely confused with a real-time connection. Within a year, attitudes had changed significantly towards the positive, although the price was still rated as high. The study's early-adopter sample consisted of the first camera-phone owners. Yet, ownership of the device was still relatively rare. By 2004, MMS-enabled phones had become slightly more common.

MMS users existed in many different age groups. Despite the differences in their age, the early adopters who participated in the study shared many common characteristics. According to Rogers, early adopters are a more integrated part of local social networks than are innovators. "Whereas innovators are cosmopolites, early adopters are localites. They are often respected members of communities, 'individuals to check with'."[16] The camera-phone owners we interviewed commonly had broad social networks and enjoyed an important position in these communities. Young people were often active in areas such as organization activities and various internet communities, for instance as webmasters for different organizations or as IRC-frequenters. The early adopters were individualistically inclined in their choices and did not rely on the opinions of their reference group; they were confident about their own style and interested in technology, yet they did not necessarily constitute stereotypical "techies". The early adopters were perhaps also somewhat wealthier than the average and sometimes displayed a rather liberal attitude to consumption.

The users related a wide variety of reasons for purchasing an MMS-enabled phone. Often, one reason was a general interest in technological novelties; many were also concerned with upholding a pioneering image. For instance, a 60-year-old man describes his acquisition of the device: "One of the reasons why I have a camera-phone is that I was always con-

[16] Rogers, *op. cit.*, pp. 282 f.

sidered as something of a liberal at work. I was always on the edge of development, so it won't do to change my image now. [laughs]" Others were interested in purchasing a camera-phone because they did not own a digital camera and thought the MMS-enabled phone practical for combining the two devices.

Saku (24), a student of economics, fits well with the image of technology-adopters as urban young men with an active lifestyle. He made his decision to purchase an MMS-enabled phone as soon as they were out on the market. He did not own a digital camera. At the time of the interview, Saku was already on his second camera-phone, as he had lost the first one on a cruise ship: "I kind of happened to fall asleep on a sofa with a friend of mine, and it had been taken from the case and my friends' money was gone as well. [laughs]" Saku takes pictures most commonly at parties and posts them on the website of a student organization. "It's good fun going through them in the morning. [laughs] I must have taken hundreds of pictures."

Kaarina (60) also purchased an MMS-enabled phone very soon after they were first launched. Kaarina is a typical MMS early adopter in the sense that she is very interested in technology in general. Since her retirement, she has developed a fascination for computers: there are several computers that she has built in her house. Kaarina related that an older woman with a knack for computers often causes amazement in her immediate environment. She often spends time in computer shops and talks to the young salespeople: "I've got a few computer shops where the professionals there think this old lady is some kind of guru. And I get a spot of practice. [laughs]"

For Kaarina, the best thing about the camera-phone is the spontaneity which enables her to take photos of any situation that comes her way, such as her discovery of chanterelles when mushroom-picking. She also carries her MMS-enabled phone while travelling, instead of a camera. She sends MMS messages to her friends as postcard-type greetings.

> I: *If you compare that to a regular mobile, what's the importance of the camera feature?*
> R: *It brings the fun into it. You can send a colour postcard of your grandchild or a kitten or a little dog or something like that. You can do things in the moment.*

With Kaarina, MMS photography is close to the traditions of ordinary picture taking: she likes to take pictures of her grandchildren and important family events.

"Digital wallet"

At the early stage, the usage of MMS-enabled phones was closer to a "digital wallet", i.e., a miniature photo album or a digital photo archive,[17] than a multimedia communication device: it was used to store pictures of girlfriends, boyfriends, children, grandchildren, and pets. The camera-phone was experienced as a spontaneous and carefree instrument that could, for instance, be used to take photos of acquaintances met only briefly at parties. It was also occasionally lent to friends. The images stored in the device were a "personal tribe, a type of a postmodern community"[18] that could then be carried everywhere. Also, the owners could share images of people and things that were important in their lives with others. The most important targets thus consisted of friends and family. Joona (18) discusses the images in his phone's memory:

> *I can pick out some typical examples for you in here... Of course things about friends if they do something stupid, and then if you're bored some artistic or semi-artistic stuff. A friend's dog, the city of Tampere by night. Sometimes I lend it to friends, so there's new images and new people, funny faces, a bus timetable I got off the bus stop – if you can't get them from anywhere else, it's quite handy to take a picture. That one there is the bus timetable from Hervanta* [suburb] *to the centre of Tampere. Then there's an image of a blackboard or an overhead projector when we couldn't be bothered to write down the homework. There's a bit of everything.*

Shots of the most important targets were kept in the phone for a long time. Unsuccessful pictures were immediately deleted. Pictures were transferred onto the computer and could be passed on through e-mail. From the phone, the images were sent as postcard-like greetings to friends' MMS devices or e-mail addresses. The small number of devices in circulation had the effect that the interactivity and immediate reactions to others' MMS messages anticipated by Koskinen et al.[19] were entirely lacking from the users' communication. Also, the picture materials examined contained hardly any narrativity or stories about the owners' lives. Interactive "thematic series"[20] were also not to be found at this stage. Use for utility pur-

[17] See also Barbara Scifo, "The Domestication of Camera-Phone and MMS Communication: The Early Experiences of Young Italians", in the present volume, p. 365.

[18] Michel Maffesoli, *The Time of Tribes: The Decline of Individualism in Mass Society*. London: SAGE, 1996, p. 10.

[19] *Op. cit.*

[20] Koskinen et al., *op. cit.*; Kasesniemi et al., *op. cit.*

poses was limited, but did exist to some degree: for instance, young people took pictures of homework written on the blackboard, or users could capture a tasty recipe from a magazine or a juicy headline advertised on a newspaper stand.

The poor quality of the video feature resulted in little use of that function. Its usage was mostly experimental. Useful material could be captured occasionally, for instance to remember beautiful scenery encountered on a holiday trip. Mobile video was an element in the sharing of common experiences. For example, a group of seniors captured their songs from a night of karaoke.[21] Oiva (68) relates:

> *You were able to video bits with the device, so one time when we were out dancing and there was a band playing, we sang some karaoke ourselves as well, so we videoed that and now it's all there on the portable computer.*

In the Midst of a Transition in Communication

The usage culture of MMS-enabled phones is still largely unsettled. If the devices become more common, communication is likely to become even more versatile. The most essential decisions in this context will be made by consumers who shape *usage culture* to fit their own lives.

> Although many innovative products exist in theory, they become real only when they are adopted in social practice. The bottleneck in this process is the "downstream innovation", i.e., the innovative capability of the user community.[22]

Prior studies have indicated the significance of personal relationships and the communication of personally important matters, feelings, and situations in MMS usage. Both the communication and the device are located on the border between new and old communication behaviour: the device is still compared to the camera, and in its early stages, its usage is still close to a digital wallet or a miniature photo album, where the most important shots are stored for long periods of time. The use of MMS photos on websites, such as IRC galleries and weblogs[23] also constitutes

[21] See also Repo et al., *op. cit.*

[22] Ilkka Tuomi, "Beyond User-Centric Models of Product Creation", paper submitted for the COST Action 269 "User Aspects of ICT" conference: *The Good, the Bad and the Irrelevant*, 3–5 September 2003, http://www.jrc.es/~tuomiil/articles/BeyondUser.pdf.

[23] See for example www.muistikuva.net.

an important usage of MMS communication by young people. The most important obstacles for the use of the camera-phone were perceived to be the poor quality of the pictures, the low penetration rate of MMS-enabled phones, and the high price of the devices. The combination of these things contributed to the fact that the real interactivity and image sociability anticipated by Koskinen et al.[24] could not yet be detected in MMS communication. It is also possible that the charm of novelty present in the research situation had an influence on the way in which the test subjects produced versatile communication content. In authentic situations, a new type of "media saturation" becomes apparent: there are many different media appliances and combinations thereof competing for people's time and attention, and the combination of the digital camera and e-mail is one example of this.

The loss of privacy inflicted by mobile images and mobile video was not a significant concern at least in the early stages of the study: instead, users often appeared worried over whether taking pictures in a public place might spark annoyed reactions. It may in fact be useful to question whether the launch of the new device is in the end likely to alter the behaviour of people in a radical manner: capturing events on video in public places has, after all, been possible for a long time through camcorders, but in practice social rules and conventions function to restrain such public behaviour.

[24] *Op. cit.*

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Young People and Seniors in Finnish 'Mobile Information Society'

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Abstract:

What is the significance of the mobile phone in the social relationships of young people and seniors? What kinds of informal and formal learning strategies do young people and seniors have in acquiring mobile phone and other ICT literacies? Young age groups have for long been the most active mobile phone users, but in the last few years the mobile phone use of over 60-year-olds has also been growing very rapidly in Finland and in other countries. This article presents research findings based on several research projects conducted at the University of Tampere on the use of mobile communication and the Internet among young people, families and seniors since the late 1990s. The research aims to explore the spread of mobile and Internet trends through study of communication and social networks among young people and seniors. The main methods have consisted of group discussions and thematic interviews among young people and seniors. By 2006, over 1500 Finns have participated in the study. The research indicates that for older generations, for whom it still constitutes a relatively new aspect in their personal histories and daily lives, the meaning of the mobile phone is highly different than for young people who have grown up into ICT citizens. Knowing the actual use contexts and user experiences of technology among different generations in their daily life can provide important insights on how to improve design and services associated with the technologies.

Keywords: mobile learning

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1 Introduction

Since the late 1990s, there has been increasing interest in how information and communication technologies (ICTs) such as the Internet and mobile phones in particular are used in our society by different age groups. Studies on these topics have often developed from an interest in how information technologies have changed young people's sociability and everyday life in different contexts, including school and family life (Livingstone 2002; Holloway & Valentine 2003). The studies have described young people as skilful and balanced information technology users (Drotner 2000; Suoranta & Lehtimäki 2003; Holloway & Valentine 2003), with the exception of those raising the possibility of a 'digital divide' arising between families with different opportunities to acquire new technologies for their children (Holloway & Valentine 2003, 30). In the world of the Internet and mobile communication, young people are seen as active subjects (see Livingstone 2002, 11–14; Suoranta & Lehtimäki 2003, 13–14) exerting their influence on the emergence, rules and character of social phenomena related to it. In general, research on mobile communication has focused on younger age groups who were among the first to adopt the use of the mobile phone and develop actual mobile communication culture.

As the use of the mobile phone has become more common and multifaceted, its significance as an instrument of the information society has increased among citizens of all ages. According to Statistics Finland, in 2004 only four out of a hundred 15–64-year-old Finns did not have the usage of a mobile phone (Statistics Finland, 2006). As the range of possible uses of mobile devices broadens, study of user experiences, user acceptance and use contexts becomes all the more crucial (see Kaasinen 2005). These issues relate also to mobile learning - how for example mobile devices can support different learning contexts (see Jones, Kukulska-Hulme & Mwanza, 2005) and how to design mobile technology that best supports different user needs for learning and teaching (Kynäslahti & Seppälä, 2003). In the context of learning, mobility introduces a number of benefits as people carry their mobile devices with them at all times, which makes them suitable for a variety of different uses. Such networked technologies allow people to communicate regardless of their location (Sharples et al 2005, 4). Mobile devices enable both informal and formal learning, including, for instance, learning for leisure purposes or science learning (Scanlon et al, 2005). On the other hand, the mobile phone is also used in situations where the user is immobile. Compared as a device to, for instance, the home computer whose use has to be often negotiated with other family members (Holloway & Valentine 2003, 102-103) a mobile device is above all a personal communication device and its key values include personally relevant and important content and communication (Kaasinen 2005, 116).

Mobile phones have exerted a great impact not only on the personal communication of citizens of all ages, but also on the infrastructure of the information society. In Finland, the information society has been a central topic of public discussion, with the development of mobile technology as an important focal point. Though alternativ theories have been put

forward regarding the essence of the information society, often the information society is seen as a completely new society in which the production of information values is perceived as central and information technology is presented as the leading force determining the fundamental nature of the new society (Masuda, 1990, 3). Yet, some consider that the role of technology is overestimated as the primary cause for chances in society, whereas a more essential question may actually concern increased informationalization that has taken place on different levels of society (Webster 2002, 273). Some consequences of these developments can be identified in social polarization and social exclusion and the heightened significance of skills and the constant redefinition of these skills, as well as lifelong learning (Castells 1997, 12).

Moreover, the ubiquitous role of mobile technology (see Sharples et al 2005, 3), its presence as an increasingly integral and invisible part of the lives and social relationships of citizens of all ages and the increasing significance of wireless data transmission make the task of maintaining and learning new technology skills all the more challenging. In Finland, numerous projects have been launched to enhance the development of a wireless information society. For instance, Tampere University of Technology has developed a Neighborhood Server concept in connection with the Wireless Vuores project. The results are to be applied in a housing district, Vuores, to be built in Tampere and Lempäälä. New wireless services are currently being developed for the server. These include an electronic notice board for homes and owners' associations, casting of votes, monitoring electricity and water consumption, adjusting air conditioning, the acquisition of statistical information, ordering groceries through a server via the mobile phone, locating children and communication between home and school. The aim is for the resident to be able to make use of the services being developed through computer, remote control, PDA or mobile phone.

According to Kopomaa, the mobile phone has played a pivotal role in the development of the contemporary Finnish information society. Kopomaa sees contemporary society as a 'Mobile Information Society' creating opportunities for ways of life based on either complete mobility or lack of it. The owner of a mobile phone has the potential to interact with the whole world (Kopomaa 2000, 4). The mobile information society can be perceived as a society where mobile technology has assumed a central role in social relations, information seeking, learning and, consequently, in people's attachment to social relationships and society at large. The mastering of mobile technology and knowledge of social uses of technologies are crucial from the viewpoint of the citizen of the mobile information society. Finland is sometimes claimed to be a country characterised by 'network sociality': life has assumed the characteristics of a project, in which information and communication technologies, especially mobile phones, play an important role in the formation of relationships as well as the maintenance of family relationships. (Suoranta & Lehtimäki 2003, 37). Learning computer skills is perceived as pivotal in society, and various courses and training have been organized in schools and in other institutions of society. Despite this, learning mobile phone skills has not been formally organised but is

left to families and individuals themselves. When assessing the educational challenges faced when using a mobile device as a tool for learning, it should be considered that their meaning for young people, who have grown up as ICT citizens, is very different than for older generations for whom it still constitutes a relatively new aspect in their personal histories and daily lives. This is why knowing the actual use contexts and usage patterns of technology in daily life is highly useful in many respects.

In the rest of the paper, I will examine more closely the ways in which young people and seniors have integrated the mobile phone into their everyday lives and explore the meanings that it has for people of different ages in Finland.

1.1 Research questions

To find out how people of different ages experience the mobile information society and the demands it poses for them, this article focuses on three main research themes:

- What was the significance of mobile phones in the societal relationships of young people and seniors;
- What were the informal and formal learning strategies that young people and seniors acquired when using mobile phones and other ICT?
- How did young people's and seniors' uses of mobile technologies in their daily life differ and what similarities were there?

The empirical data presented here is based mainly on a study carried out on the mobile communication of seniors and young people between 2002 and 2006. The aim of the study was to chart the use of the communication device in a socio-cultural context and to describe the daily use of wireless handsets and information technology, their meaning in the lives of seniors and young people as well as general attitudes to technology. During the period, a total of 400 seniors and young people participated in the study.

In the most recent project, Mobile Visuality, in 2005, the objective was to chart the practices of visual communication and value-added services in mobile and Internet environments and to understand the dimensions of user experiences through an examination of the use of third generation mobile devices in everyday life among certain key informants of young adults, families and senior citizens. The third generation mobile devices make higher transmission speeds and more and richer contents possible (Dunnewijk & Hultén 2006, 5). From the user's point of view this means some new kinds of services such as mobile videotelephony and higher speed for using of existing mobile services such as e-mail and news broadcasting.

In 2004, the research group carried out the 'Mobile and Internet Trends 2004' project at the Hypermedia Laboratory, University of Tampere. The study focused on recent trends in mobile communication, communities in the Internet and visual communication, especially

picture weblogs, usage of MMS and mobile video. The study was implemented in co-operation with TeliaSonera and the Information Society Institute of Tampere University. In 2003, the Hypermedia Laboratory at the University of Tampere implemented the 'Lifestages and Mobile Cultures' project in co-operation with TeliaSonera and Information Society Institute. The study focused on the adoption of MMS devices, new forms of Internet communication and consumer trends among young people and seniors. In 2002, the team implemented the 'Young People and Wireless Future' project in co-operation with Nokia Mobile Phones and Sonera Mobile Services as well as a study on seniors' mobile communication and Internet use financed by Sonera.

Tampere university was coordinator of the study called 'Wireless Kids: International Research on Mobile Cultures of Adolescents" in 2001-2003.It aimed to map some international variation in Finland, UK, Germany and Japan and to understand mobile phone behaviour amongst teenagers in these countries. The project observed the mobile communication of children under 12 years of age and teenagers between 13 and 18 years of age in the four different countries. One of the starting points for the project was that the use of mobile communication has become increasingly common among children and adolescents throughout the world. This did not mean, however, that the development would lead to a universal communication culture for children and teenagers: usage varies extensively depending, among other things, on the services on offer and the traditional models of socialisation prevalent in the countries. The project focused on social innovations that children and teenagers produce when adopting new communication devices.

The project was preceded by the 'Everyday Life and Mobile Communication of the Finnish Youth and Families with Children' project carried out in 2000 and the 'Mobile Phone Culture of Children and Youth in Finland' project implemented between 1998 and 1999. These projects were part of the 'Telecommunications: Creating a Global Village' (TLX) program by the Finnish National Technology Agency, and they were preceded by a pilot study examining the mobile communication of Finnish children and teenagers mostly in a family context financed by Nokia Mobile Phones and Telecom Finland.

1.2 A methodological approach to mobile meanings

According to theoretical frameworks of cultural studies of technology, technologies emerge out of processes of choice and flexibility, or the different meanings that various relevant social groups hold (Bijker, 1992). Rather than mere physical objects, technologies can be seen as a socially construed part of human action and information production (Bijker, Hughes & Pinch, 1987). Technology and its impacts are construed and defined culturally: technologies do not speak for themselves or have an impact outside of people's interpretations. The interpretations and meanings produced by people in social interaction occupy the most central position in the equation. In addition to their existence as material objects, communication technologies, such as mobile phones, can be seen from a viewpoint of symbolic articulation, as cultural meanings and interpretations. The semantic universe of

these symbolic meanings is generated in social processes, and they have a bearing on the ways in which people act in their everyday lives (Lie, 1996; Silverstone & Hirsch, 1994, 15–16). The perception of technology as a social construction refers here to the interpretations and meanings produced in social interaction between people: the ways in which mobile technology is seen and observed subjectively and the meaning that is given to these observations.

In order to understand and to bring out the social meanings and cultural practices related to mobile communication by different age groups, we have used a 'multi-method' approach in our projects. Various methods are combined in order to understand the significance of mobile communication to young people and seniors. The methods used include questionnaires, thematic interviews, field experiments, observation, collection of SMS and MMS messages, photography, picture collages and media diaries. The main methods have consisted of couple and group discussions and thematic interviews among young people and seniors. Our purpose was to ask people to explain the logic and rules of their own social environment so we met people in places familiar to them from their own everyday lives and pertaining to their 'natural living environment' (see Harré and Secord, 1972). The seniors' interviews were often held in their homes; sometimes also in coffee shops; and young people were interviewed in places popular among young people in general, such as fast food restaurants. The duration of the interviews was approximately two hours and they were carried out in all parts of Finland, both in urban and rural areas. The socio-economic position of the informants varied greatly.

We include citations from interviews that foreground the experiences of the researched in their own voice. Using a research design like this, it is important to remember that meanings are not produced by the researched alone, but they are also created by the researchers involved (Holstein & Gubrium, 1995; 4). Interpreting the material poses many challenges, and not all of the many meanings embedded in the responses can always be extracted from the data. The research interviews were either semi-structured or unstructured. All the interviews have been transcribed and thematically divided into subsections. As the research progressed, interesting themes arising from the data were raised as targets of analysis and were discussed in subsequent interviews with the informants. Comparisons were also made to findings from the group's study on the mobile communication of Finnish children, young people and their families initiated in 1997 and to a project, carried out in 1999, examining the mobile communication of seniors.

With this kind of research design, there is a tendency to avoid early hypotheses as they are often doomed to failure; instead the thematic interview generally begins with a set of very general questions (Silverman, 1994, 36). The researchers have followed a principle of 'active sampling': new focal groups can be introduced in the interviews as information about a studied phenomenon spreads and a need emerges to acquire additional information on a specific issue (see Holstein & Gubrium (1995; 74)).

For instance, in 2005 the interviews yielded information about MMS messaging having

become very popular among certain senior women. We therefore decided to interview a pair of female friends that actively use MMS in their communication between each other. The methodic principle of the study comes close to an approach used by Plant (2000) in her ethnographic study focusing on international mobile cultures. Plant introduces themes and anecdotal examples emerging from the data in further interviews thus enabling mutual exchange of information and ideas between the researchers and the researched. This kind of approach, to an extent, works towards breaking down the distinctions between the interviewees and the interviewers which can often compromise such ethnographic work. (Plant 2000, 25)

2 Young people and 'mobile literacy'

In Finland, the expansion of mobile phone use to younger age groups began in 1997. The rapid spread of the device between 1997 and 1998 can be described with the word explosion. The emergence of mobile communication culture in Finland and in other Nordic countries preceded the development in the rest of Europe. In 2002, over 90 percent of Finns aged 15 to 19 had the use of a mobile phone. For several years, Finnish mobile phone penetration rates were the highest in the word. In 2001, the situation in Finland was no longer unique: in Europe, in addition to the Nordic countries, the use of mobile phones was by this time equally active in Italy and in Austria. (Statistics Finland, 2002)

As mobile phones have become common in almost all age groups, knowing how to use the mobile phone is perceived as a general skill that everyone should master. We may consider whether mobile literacies have in fact become a separate category of citizens' most common media literacies. Terms such as 'media literacies' and 'new multiliteracy' are used to refer to knowledge, skills and competences necessary for the use and interpretation of media (Buckingham 2003, 36). Multiliteracy is not just about the capacity to make use of multiple modes of media and communication, such as the technical management of the mobile phone. It is also to do with the inherently social nature of literacy - with the diverse forms that literacy takes in different cultures (Buckingham 2003, 38). There is still disagreement about what to call this new literacy and how to integrate it to other learning environments. However most would agree that digital media literacy embodies the potential for non linear browsing, the random juxtaposition of content, interactivity and the manipulation of text, sound, image and the moving image (Tyner, 2003, 373). The mastery of mobile literacy also entails social skills that people use to become a part of mobile-mediated social networks and get linked to the distribution of information. Different contexts of use highlight different mobile media literacy needs, from technological literacy to social rules, such as mobile phone usage etiquette (Syvänen & Vainio, 2005, 2). The young people interviewed in Finland for this study said that they give quite a lot of thought to people present and the place or situation in which they find themselves when using the mobile phone. For example they switch their mobiles to mute, prefer text messaging and speak 'in a moderate tone of voice'.

For young people, the context of leisure is important in gaining a whole body of knowledge, skills and competencies as consumers and users of digital multimedia (Sefton-Green & Buckingham 2003; 64). The same is true with mobile telephony. For teenagers, the most common strategies for learning mobile phone skills were peer group influence and 'trying things out'. Generally, rather than browsing handset manuals, young people learn the use of new functions through watching their friends and trying out the functions of the phone. An 11-year-old girl talks about how she learned to use SMS:

> I still don't know how to use everything in it. But I've tried. I browsed it a lot, and it took me a couple of years to learn to send text messages and things like that. I just tried things out.

In our study, with the spread of mobile telephony, the parents in particular were under the impression that teenagers had high mastery of the technical side of mobile phone use. Parents explained that even teens who do not own a mobile phone nearly always know how to use one; children, too, often have several years of user experience. However, the research also showed that adults may sometimes overestimate children's technical and communication 'mobile literacy' skills (Oksman & Rautiainen, 2002). Surprises could occur for instance when the child was not able to leave a message on the voicemail or had not known to charge the phone's battery.

According to the data, young people consider mobile literacy and other ICT skills as important for citizens of the information society. The phenomenon is connected with a strong norm of mastering technology among younger age groups: in order to do well in studies and succeed at work, the individual must master and acquire the most recent technology. Young people perceive the development of technology as an automatic, self-governed phenomenon, and see young people and seniors as existing in separate realities in which technology has entirely different meanings:

> R: How do you feel about the general development in technology?
>
> I: You can't help it, it just keeps on going forward. You have to keep up really if you want to succeed in this world. There's people of course, older people, they don't have the need for them, they don't have a computer, just an old TV, and that's enough. They don't need it. They live in a different world, they don't live in an information society or where everything has to be shiny and as technological and expensive as possible. (Boy, 18)

Young people often create their own media usage cultures outside formal education (Sefton-Green & Buckingham 2003, 64). Particularly with mobile communication, young people's own communication culture, often concealed from adults, has been strong; the focus of communication is in the creation and maintenance of peer group relationships.

3 Young people's self-presentation

The mobile has become an instrument that teens use to define their personal space in relationship to friends and parents. Teens struggling between independence and dependence on parents may not always appreciate parents' attempts to be part of their social space (see Oksman & Turtiainen, 2004, 325). In general mobile communication becomes interesting around the age of 10 to 12 as children's social networks expand. Mobile communication unites friends and affords an opportunity to explore new relationships. Young people have acted as developers and pioneers of SMS culture. Part of the SMS communication is private, part shared, collective. Spoken language expressions and plays on words are common in text messaging (Kasesniemi & Rautiainen, 2003, 171−180). Text messaging may be one strategy for teenagers also to present their more courageous selves. A 16-year-old girl discusses the downsides of SMS relationships in her media diary:

> A boy from our old school kept asking me out, but I told him that if he wants to meet me, he'll have to call. He promised to call me the next week. I expect he is summoning his courage. All the same, I won't be starting any SMS relationships. I had one once: the beeping of the phone is not all that stirring in the long run – and it costs you money, too. Another boy from the same school also emailed me that he misses me. It's easy to be open in a text message but yesterday, when I went to say hello to him, he was as shy as ever. (Girl, 16 years, extract from media diary)

Based on the Wireless Kids project and other case studies, teenagers' mobile communication cultures in different countries incorporate more similarities than national differences. The following features can be identified in Europe, Russia, the United States and Japan: the central position of text messaging, teens' own subculture of SMS expression and focus on communication between friends (see Lorente, 2002). Yet, everyday mobile communication in different countries also contains variation. For example in Japan, the 'privacy' aspect of mobile communication is valued more than 'mobility'. This is likely to be due to the fact that in Japan, young people have little private space: Japanese urban homes are usually quite small, and teens generally share a room with a sibling or a parent (Ito, 2001). In Finland, however, teenagers valued the mobility aspect as it increased their sense of freedom: being able to reach them through the mobile, parents allowed their children to spend more time out with their friends.

According to the Wireless Kids project, in the UK, teenagers see the Internet as highly useful for acquiring information, but preferred the mobile to the Internet in basic communication: *I can take my mobile anywhere I want, unlike the Internet you have to go there and sit down.* Most teenagers are emotionally, personally and psychologically attached to their mobile phones. In 2002, the interviewed teens in the UK had 1 to 2 years' experience of using a mobile phone. Most teenagers considered the mobile phone as important in their lives, girls more than boys. The word 'need' occurs in over 75 percent of the responses. When the word need is not there, the word 'life' is. (Chivhanga & Nicholas,

2002, 39)

> 'I feel it is a very big part of my life', (12-year-old girl, UK);
>
> 'It's a part of my everyday life, I need it', (19-year-old boy, UK);
>
> 'It's my life', (18-year-old boy, UK);
>
> 'It's my lifeline', (17-year-old girl, UK);
>
> 'It's crucial to social life', (17-year-old girl, UK);

UK teenagers used mobile phones to contact friends and family and felt that the device added to their personal security. In the Wireless Kids studies carried out in Finland, Japan and Germany, young people's need for security did not emerge as strongly as in the British study. Young people in the United Kingdom considered the mobile phone as a more humane technology than the Internet, which seemed to be further removed from their daily lives (Chivhanga & Nicholas, 2002, 40-45):

> 'My mobile is important to me because it keeps me safe. I think it keeps me safe because when I am out my mum can ring me and tell me anything or ask me anything. It is also good because it gives me a chance to contact my friends in a different way. Instead of ringing my mates I can text them. I think that texting is much better than ringing people. It is much cheaper and easier. There are also more things on a phone like games, taking photos, listening to the radio and going on the Internet. I would be lost without my phone.' (Boy, 12, extract from media diary, UK)

In the years of the study, for young Finns, the mobile phone has become such an integral part of the teens' person that in everyday speech it is often referred to through a metaphor of a body part (see Oksman & Rautiainen, 2002). Earlier, in the 1990s, the mobile phone involved certain status value for young people: it was carried conspicuously with a belt clip and the personalisation of phone models through colour covers or even nail varnish was common. In the 2000s, the mobile phone has become a less glamorous aspect of everyday life: it has perhaps become more 'transparent technology', more invisible, primarily seen as a means to access various kinds of interesting content (see Livingstone 2002, 70). As a result, the mobile is no longer constantly visible: it is carried in a pocket, as close and as easily accessible as possible. In 2002, the interviewed teens had approximately seven years' experience of owning a mobile phone. Even though over the years the mobile phone has turned into a multimedia device enabling activities such as surfing the Internet, gaming, listening to music as well as the use of multimedia services, its most important function for most still remains maintaining contact to one's social network, friends and family:

> The mobile is really important for me and I take really good care of it. It's like my whole life in the palm of my hand. I save all the important messages. My dad sent me a text message three minutes into the New Year. I often bomb call my parents

> and then they call me back. I don't see my dad so often, but he sometimes gives me a call just to ask how I'm doing. My big brother sometimes sends me funny messages that we get a good laugh from, especially if I'm with my friends. And I'm in contact through the mobile with my half big sister a lot. (Girl, 15, Finland)

Mobile communication has become rooted in the everyday communication practices of the immediate environment of young people. New situations inside the family such as divorce, one-parent families and the forming of stepfamilies place demands on the organizing of everyday life. 10-year-old children owning a mobile phone are no longer seen as an unusual phenomenon that requires explanation. Nowadays grandparents, too, communicate with their grandchildren via mobile phones. In addition to voice calls, they may also use SMS or MMS (in 2005, the 'Mobile Visuality' project studied MMS communication within families, using methods such as video call testing).

4 Seniors and mobile communication

Seniors' mobile communication network usually consists of family members: children and grandchildren. However in recent years, communication between friends and acquaintances has also increased. As to the Internet, many expressed a wish for more of their fellow seniors to become active users and start frequenting chat rooms, for instance. The seniors in the study were relatively versatile in their use of the computer, but their use of the Internet still often remained relatively narrow. The seniors interviewed also saw wireless and information technology as an essential part of future systems in services for the elderly. On the one hand, technology engendered horror scenarios of loss of human contact in healthcare, but on the other hand it was also seen as a part of a self-help system for still active seniors, enabling them to live independently in their home environment for longer.

In 2002 some 70 percent of 60- to 70-year-old Finns owned a mobile phone. Earlier (in 1999), seniors had many negative opinions on mobile communication: 'The mobile phone enslaves you, ties you down'; the mobile phone was also perceived as 'summer cabin phone', which meant that it was used in special circumstances alone. Since then, the attitudes have changed and mobile usage has become a daily occurrence. Mobile communication has more than fulfilled the expectations directed towards it by the age group of seniors.

The age cohort of Finnish seniors aged 60 and up have witnessed an enormous technological and societal transition in their lifetime. According to Roos (1985), the elders of the age group, those born before 1925, represent the generation of war and scarcity. Those born in 1925-1930 belong to the generation of reconstruction: they have spent their childhood in an era where everything was scarce, but their youth has been characterised by increasing prosperity and their experience of their generation has been identified with a strong belief in progress. (Roos, 1985, 54-55.)

The seniors interviewed for the study (Lifestages and Mobile Cultures project) had an

active and independent way of life, and they emphasised the ability to control their own lives and express themselves for instance through hobbies. The seniors in the study were still healthy and capable of leading independent lives. Many of the seniors in the sample were at a lifestage where they had just retired or were planning their retirement in the near future. Most had grown children and, after the children had left home, had found themselves with a lot of time on their hands for activities such as new hobbies, travelling and learning new things. Many had been using the mobile phone for several years already and were familiar with information and communication technologies from working life. This stage of life following working life and preceding old age has frequently been termed the 'Third Age'. It can be seen as an era of personal fulfilment characterised by a search for new experiences, realisation of dreams and the learning of new and interesting things (Blaikie 1999, 68−71).

5 From safety device to a tool for fun communication

According to Ling and Haddon (2002, 246–247), there are several motives associated with the adoption of the mobile phone, and generation also creates a factor in this. These motives include accessibility, display, coordination, and safety or security. The accessibility and display issues are pronounced among teens and young adults. The use of the mobile phone for micro-coordination is the most noticeable in families with children. Issues connected with safety and security are emphasised with older users. In our study (Lifestages and Mobile Cultures project), despite their active and mobile lifestyle, the most common reason for mobile phone acquisition among seniors remained the security aspect.

In our study, Finnish seniors' attitudes to the mobile phone differed from those of young people, for whom it was mostly a tool for constant and immediate social communication between peers (Oksman & Rautiainen 2002; Oksman & Turtiainen 2004, Kasesniemi and Rautiainen 2003). For seniors, the mobile phone constitutes a device for communication between family members, and the interviewees' stories highlight the relative significance of health and security aspects (Oksman & Malinen, 2004). Interestingly, even though the possible radiation hazard caused by the mobile phone has been widely discussed, Finns are not largely concerned about it (see also Kopomaa 2003). In 1999, when the mobile phone was still a new device, some seniors were under the impression that all electronic appliances (e.g. laser printers and microwave ovens) would prove health hazards. Some had purchased a hands-free device with the aim of minimizing the health risks. Also, the health risks were not perceived as a major problem in this age group because of the fact that seniors use mobile phones less than the younger age groups (see also Kopomaa 2003).

Certain aspects of Finnish culture can be used to explain the proliferation of mobile phones among seniors. Many wanted to purchase a mobile phone to increase security while staying at their summer cabins or to replace costly fixed-line phones there. The mobile phone was acquired as a safety tool for outdoors activities: berry and mushroom-picking, hiking and

camping. Often, the mere fact of carrying a mobile phone was said to significantly improve security. Seniors acknowledged the risks involved in their leisure activities. It was commonly thought that the mobile phone would enable fast action in the various unpredictable situations of daily life. Driving was mentioned as one situation where the presence of the mobile phone 'just in case' might prove crucial. A woman tells about the use of her mobile phone as a safety tool in her leisure activities:

> I always have it with me at the stables or when I'm driving, I feel that here in the country I could easily end up somewhere by the side of the road if I don't have a phone on me. Then, when I'm riding out in the terrain, since I always ride alone, so I always carry the phone, for if something happens I can call someone, to ask them to collect me. I don't like going out with a horse without a phone, even though I am awfully brave as a person, but I'm not quite that reckless. (Woman, 58, secretary, still working)

The interviews highlighted the notion of learning new things in connection with mastering the use of the mobile phone, computers and other new technology. The senior users found pleasure in their continuing ability to still learn something entirely new. For some, their interest in technology also served as a type of substitute of time that before was spent at work: activities such as mobile phone courses or computer classes served to structure daily life, and the work done aimed at a specific goal. This enhanced a feeling of belonging to society, particularly the much talked-about information society. Yet, seniors see a difference in their level of participation in comparison to younger people: their participation is entirely voluntary by nature and not determined by an external demand to keep up with the latest trends of technology. Generally, Finnish seniors have been active participants in information society related education. In Finland, opportunities for open education have been fairly widely available, most visibly at Universities of the Third Age (part of Open Universities). The Finnish 'senior universities' are part of an international network (Universities of the Third Age, Universités du Troisième Age). Teaching, including courses related to ICTs, is currently provided by nine Finnish universities. Seniors' own ICT associations (e.g. Enter and Mukanetti) organise computer and mobile phone classes. Even in small municipalities many village associations organise a wide range of courses in information technology.

6 The use of mobile phones by seniors

The data gathered indicates that many seniors still carry mobiles only in special circumstances and do not stress the need for constant accessibility and 'online' presence in the same way as the younger age groups do. Yet, the significance of the mobile phone as a personal communication device has increased. In 2002, it was increasingly common for both spouses to have their own phone (cf. 1999, when one phone per couple was considered sufficient). A 65-year-old man interviewed for the study talks about the necessity to have

separate mobile phones for him and his wife:

> I: You wanted to get one for both, in order for people to reach . . .?
>
> R: Sharing a phone these days is a bit like sharing a toothbrush, so . . . we both need our own. (Man 65, manager, retired)

Our data from 2002 shows that usage immediately after purchasing a mobile phone is characterised by caution. Inexperience as a mobile user is manifested for example in how the owner, rather than wearing the mobile phone at all times, only carries it on special occasions (the summer cabin phone phenomenon). Often, the user is not familiar with the mute option but will choose to have the phone turned off in public. Later, the mobile phone is assimilated into the activities of everyday life and the people are more inclined to take it with them as they leave the house. Still, the data features instances of online culture that are somewhat dissimilar to that of teenagers. Older people may for example feel more uneasy about the blurring of public and private spheres in mobile communication. For example some felt irritated about people discussing their private affairs on their mobiles in public places:

> R: Nowadays people blabber all about their love life and health information and all their private experiences on the street. That's absolutely unintelligent.
>
> I: You are not used to it even though it has been like that already for ten years or so?
>
> R: No… I would rather go to speak to some quiet place with no traffic noise and people around me. (Man, 68, building contractor, retired)

Text messaging in particular has become a new way to stay in touch with grandchildren. With some respondents, text messaging actually constitutes the main use of the mobile phone. A retired Latin teacher related using text messages to send Latin sentences:

> R: This mobile phone is a marvellous gadget, you can send short and concise messages in Latin and my ex-students answer me and they have asked me to correct their mistakes. So I've also sent out corrections through SMS. It is really very educational, you have to learn to formulate your message very briefly and concisely, without compromising the style. Quite unexpectedly, you could almost say this has become one of my most important hobbies in my retirement. (Man, 70, university teacher, retired)

According to the data, changes in life situations are likely to accelerate seniors' use of mobile communication. After the pressures of working life, contacts with friends and family often become more frequent. With the increased leisure time, hobbies and hobby-related relationships may also increase communication. The widowed informants talked about increased use of the mobile phone: they wanted to share their loneliness and anxiety with others who had gone through the same or other people close to them. In addition, the

mobile now functions more often as an instrument of fun communication. Some of the seniors were also inspired by MMS communication. In 2005 two woman friends were interviewed for the Mobile Visuality study. They discussed MMS communication between friends and family members. Both women were still actively working and had become grandmothers within the past year. One of the women had a son living abroad with his family with whom she maintains contact mostly through the mobile phone. In the extract, she contemplates the relationship between text and image.

> Text alone doesn't do that much for me. Image is a different story. It brings real content, it brings the person close to you. When you see your grandchild in the picture it's completely different to them just writing to you that the baby is doing fine. I don't necessarily need pictures of my son or my daughter-in-law (laughter), but it would be great to get images of my grandchild every day for my phone. (Woman, journalist, 62, still working)

Young people have often been considered as pioneers of mobile phone and Internet use, as the age group that is the first to adopt the most recent mobile technologies and uses, with senior citizens following a few steps behind. According to the study, however, some seniors adopted the new solutions simultaneously with the young innovators, for example buying their first camera phones and beginning to use MMS at the same time as them (see Oksman, 2005).

The age group of seniors thus often has its own innovators who have an important social role in their circle of friends in the spread of new mobile devices and their uses. They are often mediators of information connected with mobile phones and computers: advice in the purchase of devices and in the choice of operator. Most do 'mobile and IT consulting' as volunteer work, teach the use of the mobile phone, the computer and the Internet to other people their age and, for instance, manage the affairs of elderly people. Seniors' ICT associations have networks of tutors and peer counsellors. The mobile peer counsellors make house calls, appear at fairs and provide phone assistance. Women in particular experience helping others as their responsibility. A 65-year-old mobile phone peer counsellor had this to say:

> One lonely 80-year-old half-blind old lady called me and told me that she lives in a house in the middle of snow. The neighbours have bought her a computer and she uses it sometimes to write letters to her sisters, one of whom is living in Canada. Now, even though she presses 'save' and then' print' she only gets blank paper. She is so sad because she can hardly see anymore and she can't be in contact with her sisters. It was such a sad story, so I began to arrange some help for her. (Woman, 65, music teacher, retired)

7 Life experience and technology

R: I suppose someone might ask me, why did I get the mobile or the computer or

> the Internet. They're all technological gadgets that I've spent most of my life hating. Now it's an important hobby for me. I have noticed that this hobby takes up a bigger and bigger share of my time. I have sometimes wondered how six years ago I managed to have time for the duties of my position at the university. And I have come to the conclusion that at that time I did not have a mobile phone and a computer. I only had a word processor, which actually started my hobby with these electronic gadgets. (Man 70, university teacher, retired)

Life experiences often lead the seniors to conclude: 'You tended to think you were not going to have any use for such and such novelty, but many times I've ended up using the thing myself.' Seniors had generally got the mobile phone and computer after retirement and began learning it with no previous experience. The seniors see the Internet as a new and exciting world that they wanted to learn more about. According to the prevalent logic, 'It keeps your mind alert and helps to ward off dementia, when you keep your mind active.'

In general, seniors had acquired a computer with an Internet connection to their home 1) after a computer course (they wanted to learn about computers in general) or 2) inspired by a hobby (e.g. genealogy) (the expectancy of the computer and the Internet to serve as a tool in pursuing the hobby). The seniors wished for easier and more practical public administration service solutions for the mobile and the Internet. The development of technology has generated much material wealth in Finland; improvement in the general standard of living has had a positive effect on the age group's attitude to new technology. Most recently, the success story of Nokia has promoted a positive attitude to mobile phones. According to Castells and Himanen (2001, 89), Finland has been an exceptionally technology-optimistic country that has been among the first in the world to adopt the use of all things technological from the electric light to the telephone. The struggle to survive has been characteristic of the Finnish history. Technology has been seen as facilitating work and survival in a severe climate. The Finns' attitude to technology has been labelled highly practical: if a new technology has proved useful, it has been adopted without too much hesitation, which, in contrast, has often been strong in older and more favourably located European cultures (Castells & Himanen 2001, 89, 141–142; 148). Seniors have learned that various tools can make daily life easier:

> Initially I thought, what are they thinking, a computer at a pharmacy: what use could it possibly be there? It would serve no purpose whatsoever. And now it's absolutely vital. Times change. I couldn't manage without it anymore, no question about it. (Woman, 60, pharmacist, still working)

The seniors did, however, express criticism of the means of constructing the Finnish information society. According to them, the emphasis has been on the quantity rather than the quality and content of the technologies. The services provided by companies were seen as too expensive and too busy: for instance, the person sent to install the computer or the Internet connection did not have the time to discuss the seniors' questions. The informants also criticised the state authorities' boasting about high mobile phone penetration levels and

Internet connection statistics while lacking both the means and the willingness to invest in an information society that would also function well at the grass-root level, in people's daily lives. The interviewees saw information technology as an essential part of the future elderly care system, mainly as a part of a self-help system for still active seniors, helping them to cope on their own for longer. However, the aspect of technology-mediation is also seen as a threat: heath care loses the warmth of human contact if online consultation is to become more frequent:

> R: There will be a time when I will need some kind of home care service, when I won't be able to get the shopping home myself. I will have to arrange for home care service. I don't want to mobilise my daughters to something like that. So in that sense it's good to learn to use these technologies in good time, so when the time comes, it will be easy to order the services. (Man 70, enterpreneur, retired)

Seniors have their particular wishes concerning both mobile services and the features of devices. New information on seniors also introduces new challenges for product development with regard to devices, for example concerning the size of the display, keypad and the device itself. According to Aula (2005), designers should always explicitly involve older members of the population in the design process. Different methodologies can be used when involving seniors in the design process: focus groups, questionnaires, interviews, observational studies. Devices and services used by seniors should be clearer and simpler to use, but what is actually meant by clarity and simplicity in this context is best determined observing seniors' actual use of the devices. For instance, senior citizens' most typical problems with web browsers are associated with their lack of knowledge about related terminology or confusion associated with information seeking. Simplifying the user interfaces of services makes them easier to use for younger as well as older users (Aula 2005, 184).

The seniors who participated in the study required services that were necessary and suitable for them. However, today's seniors are not interested in products that carry a reference to their age (see also Östlund 1995; Östlund 1999). The age label of certain mobile services (e.g. the reminder) is not compatible with the modern image of the 'active senior': people remain capable of managing their affairs and pursuing an independent life long after retirement from working life. Instead, seniors are interested in services that promote their physical and mental well-being thus providing opportunities for a longer and healthier independent life.

8 Conclusion

The research has shown that even though the mobile use of young people and seniors displays some similarities, mobile communication still has a very different significance in the daily lives of the two age groups. With young people in Finland, the communicative use of the device is highlighted, whereas seniors, at least in the early stages of mobile usage, appreciated the significance of the mobile phone as a tool to increase security. With both

age groups, friends and peer counsellors have proved to be good teachers of mobile use, as they are able to teach at a pace and with the methods best suited for the age group in question. As seniors are interested in the use of mobile services offered by various institutions of society, the significance of training in the use of technology increases, in order for the services to be available to as many people as possible. Training in mobile skills would also benefit many younger age groups as well.

9 Future directions

As the population of industrial countries continues to age, the need for supporting independent living arrangements, a sense of community and life management increases. Wireless technologies related to care giving and support may offer a variety of different benefits in people's daily lives.

Learning the use of technology and the educational use of mobile technology are also essentially linked to questions of acceptability - mobile technologies must be such that people experience them as easy to use, useful and see them as producing additional value. In the future, mobile learning may incorporate an increasing amount of game-like features - in this way, the entertainment value and aesthetic advances of other mobile services may serve to enhance the production of more appealing solutions for mobile learning.

Aside from questions of mobile learning, the ambient and omnipresent technology of tomorrow makes it necessary to study ethical questions regarding how, to what extent and what kinds of wireless technologies users are willing to accept as part of their daily lives.

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Publication V

Mobile Visuality and Everyday life in Finland: An Ethnographic Approach to Social Uses of Mobile Image

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Mobile Visuality and Everyday Life in Finland: An Ethnographic Approach to Social Uses of Mobile Image

Virpi Oksman

> *I'm currently waiting, I have two families near to me that both are now having babies through artificial insemination, so I'm waiting from both directions to get an MMS message pretty soon; it'll be exiting to see which one of them gets there first. And I'll be sure to feel hurt if I don't get them. That's how it's gotten nowadays. (Valma, 64, grandmother)*

In recent years, as camera phones and digital cameras have become more common, sending visual messages has become increasingly easy. Visual communication is used most importantly between members of the immediate circle: MMS creates closeness between friends and family members and adds emotion to the communication; messages are often humorous and they function to maintain and enforce relationships and social bonds. Mobile visual communication has become one means of communication to complement the more traditional ways of keeping contact. For instance the news about the arrival of a baby or a new pet is delivered immediately through MMS, whereas before sending photographs in a letter was perhaps the most commonly used method.

The aim of this article is to observe the uses of visual mobile technology and the social meanings associated with it through an ethnographic research design. The research group at the University of Tampere in Finland has charted developments in the usage of mobile communication and the Internet since 1997. A longitudinal study of many years provides data for the observation of trends in technology use. Between 2002 and 2005 the University of Tampere has been analysing the wishes that users of various age groups have in relation to mobile media, data communication and value-added services. After 2002, the study of MMS communication has become an important aspect of the study. In 2005, field experiments have been carried out with

key informants using 3G phones. The experiments are used to provide more detailed information on the usage situations of daily life and the special characteristics of the role of image in mobile data communication.

The research has utilised mainly two different types of ethnographic research design in the context of research on visual mobile communication: 1. field experiments and 2. longitudinal follow-up study of the phenomenon through thematic interviews and observation. The article analyses the types of knowledge that can be produced and the variety of information needs that it can be used for.

1. Approaching the social uses of mobile images

Mobile visual communication has been studied through several different methods in different countries. Often, research results have been acquired through field experiments where the subjects have received camera phones to use for a certain period of time. In some countries, such as Japan, interviews of camera phone owners have been possible for some years due to the high penetration level of the devices in the country (Okabe, 2004; Ito, 2005). Many empirical studies on mobile image highlight the personal and emotional nature of the communication (see Van House et al., 2004; Okabe, 2003; Koskinen, Kurvinen & Lehtonen, 2000; Kasesniemi et al., 2003; Scifo, 2004). In Japan for instance mobile images are experienced as very private – many say that sharing photos feels more 'intrusive' than just sending e-mail messages. Photos are mailed only to intimates such as a lover, a spouse or a very close friend. Decisions about sending an image or what kind of a photo to send are made based on social relationships (Okabe, 2004:10). Van House identified four traditional uses of photos: constructing a personal and group memory; creating and maintaining relationships; and self-presentation. On the basis of camera phone studies, a fifth category was also identified: functional images. From their data, the researchers concluded that camera phone use encourages experimentation with a more expressive use of images (Van House, 2004:3). Kindberg et al. (2005:1546) observed in their study that the most common reason for capturing a mobile image was to

enrich mutual experience by sharing an image with those who were co-present at the time. The image was sent later, as a memento of something experienced together. The largest category of images, however, contained those captured for the purpose of individual reflection or reminiscing. These were often pictures used as digital 'flipbooks' of favourite images, or the images one might keep in one's wallet, depicting, for example, family members, friends or pets (see also Oksman, 2005:359). The social function of a camera and an MMS phone differ in some important ways. The camera phone has a more ubiquitous presence and its use is somehow more personal and private in nature – traditionally the camera has been used for special events. The camera phones tend to capture more fleeting and unexpected moments (see Okabe, 2004:6-7; Oksman, 2005:359).

In this article, I observe the social meanings associated with mobile images in people's daily lives in Finland: does the mobile image alter the ways and traditions of depicting life? The research aims to uncover how the development of mobile visual communication situates itself as part of the development of digital and visual literacy and people's capacity to structure visual messages in a way that supports the person's individual needs and accommodates their personal production of meanings (see Sinatra, 1986).

2. Multi-method ethnography

In our study on the social meanings of the mobile image, we have used an applied ethnographic approach. According to the established tradition (e.g. Van Maanen, 1988), an ethnography is a written representation of selected aspects of a culture. Ethnographic writings can and do inform human conduct and judgement in innumerable ways by pointing to the choices and restrictions that reside at the very heart of social life. In the anthropological tradition, ethnographic fieldwork usually means living with and living like the people studied, and anthropological fieldwork routines involve immersion in a culture over a period of years (Van Maanen, 1988:1-10). When examining the use of the mobile phone or the Internet in contemporary

society, researchers are already living amidst the studied phenomenon. In a situation like this, the researcher leads 'a double role' that – in addition to making observations and analysing the lives of fellow human beings as an outside observer – also involves living amidst the phenomenon and becoming a part of it, for instance as a user of the mobile phone and the Internet. One of the challenges of this type of research thus constitutes eliciting empirically interesting results from a familiar everyday setting. According to Silverman 'The good observer finds excitement in the most everyday, mundane kinds of activities' (Silverman, 1994:30). The ethnographic approach was used in the 1980s to study domestic technologies (Silverstone, Hirsch & Morley, 1992). Research into the use of the Internet, computers and the mobile phone has generated a variety of new ethnographic methods. In addition to thematic interviews and observations, the realities of the researched can be understood through collecting other materials such as Internet ethnographies and computer biographies (see Henwood et al., 2001). Also, interviews can be conducted through e-mail or virtual observation can be carried out in chat rooms (Bober, 2003).

Our research design of 'applied multi-method ethnography', which could also be referred to as 'multi-modal ethnography' (see Dicks & Soyinka, 2003) is largely based on thematic interviews and other research material to support them. During the years we have gathered different types of materials produced by the informants themselves, such as media diaries where young people describe their everyday media use. Later, in connection with the field experiment, the participants wrote test diaries on their use of the camera phone. Through these materials, we were able to deepen our knowledge about a variety of different thematic areas. For instance, through media diaries we received more precise information about young people's daily routines and media use. The diary material contained more specific details about the use of media and user experiences, which in an interview situation might have seemed to the respondents too trivial to mention. We also gathered different visual material produced by the respondents. This consisted of children's drawings, photos and MMS images taken by young people and picture collages compiled by them. More recently, the visual material of the project has come to consist mostly of MMS images and videos that at present number about 1.000.

We also gathered different observation material. The researchers followed weblogs, discussion boards, image galleries and homepages popular among young people and seniors. The method of mobile and Internet culture observation complemented the interviews and provided additional information regarding various interesting questions that had arisen in the interviews. For instance, we examined mobile image blogs and the types of communication that they were used for among different age groups. Thematic interviews were established as the main research method, and some 400 of them have been conducted during 2002–2005. The sample includes teenagers, families and senior citizens from different socio-economic backgrounds. Conducting a thematic interview is a developing skill that every researcher acquires little by little. In this kind of research design there is a tendency to avoid early hypothesis as they are doomed to failure; instead the interview generally begins with a set of very general questions (Silverman, 1994:36). A research period was generally begun by carrying out some initial 'test interviews'. It is worth mentioning, that the 'test interviewee' could, however, be a highly knowledgeable informant that was able to, for instance, offer the interviewer a thorough introduction into the current communication culture of young people. In the research interviews, we commonly utilised a basic framework of questions including a variety of both more specific and more general questions, but a strong hypothesis was generally avoided as it would most likely have proved unsuitable for the purposes of the research, since the reality of the interviewees is always more complex and surprising than expected. Moreover, significant changes could occur in people's attitudes and the usage patterns of mobile images in a surprisingly short space of time. Our approach to the research interviews resembled largely the notion of the active interview described in Holstein and Gubrium (1995), which is well suited for topics where the researcher is interested in subjective meanings and the interpretive constructions used by the interviewees. With the active interview, the method of sampling is described as 'experimental and spontaneous'. The number of interviewees can be increased in the course of the process for instance as new and interesting themes emerge from the topic. In practice, as we received enough information on a certain topic, such as parents' attitudes to camera phones, we would move on to seek information on MMS

communication between young people. Similarly, if we have had a sufficient number of informants with a certain background, such as university students, we would subsequently contact new young adults already in working life to become part of our focus group (so called active sampling).

Figure 1: Children's drawings of camera phones in 2002, when the interviewed families were not yet using camera phones. Traditional norms as to how a mobile phone should look like do not always apply to children (cf. drawings). In the children's opinion, the optimal mobile is new and modern and incorporates many extra features. The most popular proposed additional features range from TV and camera to flashlight and soft drink vending machine.

3. Ethnographic field experiments

In 2005 the project carried out ethnographic field experiments with the purpose of anticipating the everyday use of MMS devices. The term 'ethnographic field experiment' is used here to refer to a certain kind of method of data collecting. In this kind of research design, the collection of ethnographic materials, such as user diaries and picture and video materials produced by informants, is combined for the usability field testing of devices (in many cases comparable testing is carried out in test laboratories and other more restricted circumstances). It is meant to produce as authentic and multifaceted a description about the use and significance of the device among the studied in the various situations of their daily lives as possible.

The subjects of the study were selected among different age groups, ranging from 13 to 65, and among different users of mobile phones. The first research period focused on the visual mobile communication of young adults and the second period on communication within family communities. Some of the researched had no experience in the use of camera phones or mobile services, whereas others had been using them for several years already. The informants' prior technology usage patterns and their attitudes to technology and mobile services also varied.[1] The studied were given Nokia 6630 and 7610 phones to use for a period of 4 to 6 weeks and were asked to write down their experiences in test diaries. Based on the instructions they received, the respondents used the phones in everyday situations. Each of the informants was interviewed twice: before and after the test period. Later the researchers asked for updates via e-mail and telephone (e.g. whether the use of MMS continued after the research period). Some of the respondents received remuneration for the costs incurred by the MMS and mobile service usage, whereas the second group paid for the costs themselves, to enable comparisons.

Through the field experiment we were able to gain knowledge about the user experiences of people who had not previously used camera phones. Some filled their test diaries with long and embellished descriptions of their first experiences as camera phone users, whereas others stated their experiences more briefly, using just a few words or sentences.

> *3 April 2005: I was absolutely thrilled about the mobile image. Usually I don't have a camera with me all the time, but now there were many more 'photogenic' situations. It was great to be able to take pictures of everything. You have the camera with you all the time because it's in your mobile. Also, the good quality of the images was surprising. Because my friends' phones are old models, I'm not able to send the images to them. It's a good thing I see them often so I can show them the images that way. Quite a few people have pointed the good quality of the images out to me. There's now this entirely new dimension to*

[1] The informants' knowledge of mobile services and their technology usage patterns were mapped with a questionnaire filled in before the interview.

picture taking, for example, I like how sharply and beautifully the wrinkles around my father's eyes can be seen in side view. I don't usually pay attention to those kinds of things. (test diary, Sini, 23)

8 October 2005: A friend's wedding. The camera mobile is alright otherwise, but it seems like a taboo at parties. I keep mine firmly hidden away. I steal a snapshot while calling the babysitter to ask how my daughter is doing. In the whole wedding, I only take two pictures, one of the happy couple (terrible backlight) and another of the children at our table. (test-diary, Anna, 26)

With the field experiment we are able to gain a better picture of the various daily uses of the camera phone. In addition to the social dimension, the camera phone appeared to incorporate a strong function as a capturer of the informants' personal memories. The camera phone was also used for self-expression; the phone was used like a diary for storing moments and experiences that are important for the owner him/herself and not necessarily meant to be shared with others. A typical target was, for instance, a pair of nice shoes the person might consider buying or nice meals eaten during the week. One woman documented the refurbishing of her house in diary form on video.

Finding the video camera was an absolute highlight with the phone. Excellent! I started to record our redecoration job. I was able to document it, something that would have been left undone otherwise. (Petra, 24)

4. Camera phones and the cycle of 'moral panics'

> *Indeed the media pose a whole set of control problems for the household, problems of regulation and of boundary maintenance. These are expressed generally in the regular cycle of moral panics around new media or media content, but on the everyday level, in individual households they are expressed through decisions to include or exclude media content and to regulate within the household who watches what and who listens to, plays with and uses what. (Silverstone, Hirsch & Morley, 1992:20)*

The longitudinal aspect of the study enabled us to draw out more general lines of development regarding the significance of the mobile image and the development of usage in the daily lives of the researched. Often, adopting a new technology as a part of daily life follows a certain 'moral panic' pattern: in the beginning, the device arouses strong opinions and horror scenarios as to how it will alter everyday practices. It is common to overestimate these effects at this stage. With time, as the technology becomes more familiar, horror scenarios are uttered less and less. In the end, the device becomes an aspect of daily life that no longer generates active discussion. The 'domestication' of mobile phones can be said to have followed a similar development trend. In 2001 and 2002, when the presence of camera phones in people's daily life was still quite unfamiliar, some people expressed rather negative attitudes to mobile phones. Despite extensive marketing campaigns, people lacked knowledge of what the device could actually do. The camera phone was commonly conceived of as the videophone familiar from science fiction with an impossible to switch off real-time video connection (see Oksman, 2005:355). Also other types of misperceptions existed regarding the functions of the device: the MMS phone was even often confused with the Internet. Parents often perceived privacy issues as constituting a central aspect in the problematic of mobile photography (see also Soronen & Tuomisto, 2002:360).

Parents feared to be forced to compromise their own privacy due to the new mobile image culture and were also concerned about the privacy of their children.

> *You don't get a moment's peace. If you go to a bar or a pub or anywhere, there's always someone snapping away photos and sending them on.* ***You don't get any privacy.***
> *That's the thing, when I think about the young people today, there are certain quite heavy ethical problems . . . girls Ella's age discussing whether or not they can have a party at someone's house since there's this one girl who wants to videotape everything. It's the same thing with the picture phone. (Father, 40, and mother, 38)*

Concern over the use of camera phones was largely caused by a lack of etiquette: there was no clear code of conduct regarding where and what it was appropriate to video or photograph, and what pictures could be published over the Internet. By 2003, people had grasped the idea of the MMS phone: it was no longer confused with the Internet or real time video connection. Within a year, the attitudes had changed significantly became more positive, although the price was still considered high (our sample consisted of the first camera phone owners, but owning the device was still relatively rare).

In 2004 MMS phones were even more common than the year before. The camera feature continued to divide opinions: some considered it a nice addition while others saw it as unnecessary. MMS phone owners no longer consisted exclusively of techno-enthusiasts. For most camera phone owners, the camera was seen as a convenient extra. The better phones included a camera as a standard feature.

> *The camera is beginning to be more or less a necessary evil, they seem to be dumping it on almost every model. (Jaakko, 25)*

Despite the proliferation of the devices, some MMS owners still did not experiment with the MMS feature. Surprisingly many camera phone owners had not ordered

MMS settings for their phone. Most commonly, the images were transferred onto a computer via infrared, but quite often the images were 'stuck' on the phone. However, various new forms of conversation based on the exchange of images were beginning to emerge.

> *There was a time I would send MMS with a friend of mine. I sent her the floor plan of our new flat when we got one. Then she sent me a picture of a can of Glühwein and Christmas cookies, as an invitation to visit them. A picture really is worth more than a thousand words. (Emilia, 23)*

The obstacles of MMS communication were connected with settings, devices and the beginning of the service. Often, it was unclear whether the recipient had a phone that could receive MMS messages, or something went wrong with the transmission and the pictures were posted online and instead of the images the person received only a notice about a website where the pictures could be viewed. Getting the MMS settings right was experienced as particularly difficult: despite efforts the connection was often not functional.

In 2005 camera phones began to be common in the families and friendship circles of the informants. For many, the camera has become an essential aspect of the phone, and the opportunity to capture random situations is a feature that is seen to promote the convenience of everyday life.

> *One important feature of a phone is of course that it has a camera. It is one of the things that you have gotten so used to that it would be difficult to do without. It is a toy for us, we take nice pictures and send them back and forth. I would have no real need for it, but I'm so used to it now, having a camera in my pocket at all times, being able to capture the situation, that it would be difficult to give it up. (Monika, 32)*

Communication through MMS takes many forms, but it has not generated an etiquette requiring immediate response through the same channel, which was a basis of, for

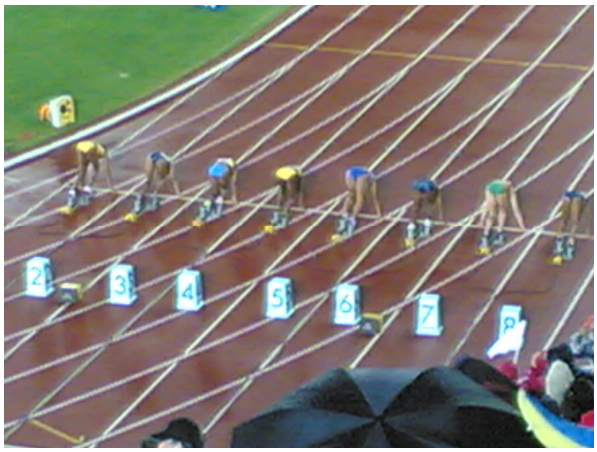
instance, young people's SMS culture (Kasesniemi & Rautiainen, 2001:186). Different discussion patterns emerged around mobile image: an MMS message could be responded to by calling, through SMS, or the discussion could continue through a sequence of video, image and SMS messages. In the below extract two friends are exchanging SMS and MMS messages at the World Championships of Athletics (standing simultaneously in different queues, later in different stands):

Olli: SMS 8 Aug 2005 at 6:20pm: 'Serious queue here. There?

Mikko: MMS shot at 6:25pm

Olli: MMS shot at 7:55pm: 'I'm here with Börje and Staffan'

Olli: MMS video of a drunken Swedish man at 9pm: ‘Isn’t it beautiful when man, sports and alcohol meet?’



Mikko: MMS shot at 9:40pm: ‘Not as beautiful as Christine Arron’s behind vibrating in replays’

5. Mobile image and telepresence

> *I’ve sent a lot of MMS to grandparents, relatives and Otso’s (2 years) godparents. Most of the relatives live pretty far, on the other side of the country. Last time I sent a video was when Otso was having a coffee party with his teddybear on the floor there. He was so funny, pouring coffee from a little plastic coffee can for the teddy. I think I sent it to my husband at work right then. Otso also has a rabbit that plays music and he turned it on and danced with it. With his grandparents living so far away, it would be nice if Otso could speak to them face to face. So we’re currently planning to acquire a webcam, so we could call his grannies on the computer and talk to them for a longer time. (Monika, 32)*

Through camera phones, Internet cameras and video calls the families can create 'telepresence', share experiences and feel as if the absent friends and family were there to witness the occasion (Kindberg et al., 2005:46). This opportunity for telepresence is capitalised on by teenagers, stay-at-home or teleworking parents and young families with grandparents living elsewhere. One teenager, whose friend had moved to Spain, describes the fascination of telepresence in the following way:

> *One of my friends moved to Spain, so I've spoken to her there. It's pretty neat, her showing me the place through webcam, so sometimes I get a feeling it's nice we have winter here. (Annika, 13)*

In Finnish society it is becoming more and more common for young families to live in different localities than the grandparents. Hence new technologies have found its place in uniting family communities. With the opportunity to send images and videos of the child's activities, the nuclear family is virtually expanded through Internet cameras, camera phones and video calls into a wider family community that may include grandparents, godparents and other relatives. When previously, contacts to relatives occurred by calling or rare visits, today grandparents are often able to follow the development of the child more closely through a variety of different technologies. Parents are able to send images or even transmit video of real-time events. For instance, a child's first steps or a visit to the park can be captured through mobile equipment and made available for the grandparents to see.

As mobile visuality and other digital image culture proliferates, people are more spontaneous about taking pictures of anything that surrounds them. Taking pictures is no longer perceived as the precious and unique occasion that required the presence of Sunday clothes and combed hair. Mobile image communication has been estimated to generate more situation-specific, but also disposable photography.

> *- You do tend to take more pictures with the mobile. It's more spontaneous because you have the thing with you all the time.*

- Maybe you think of them somehow as less official. That maybe they're not real, actual photographs.

- You don't think of these phone images as something you will return to when you're a grandmother. They're more like snapshots. (Sami, 20, and Saana, 20)

With the increase of digital photography people do not necessarily feel the need to have paper versions of all their photos. Developing film into printed photographs and setting them up in albums is seen as laborious and old-fashioned. Saving images on the hard drive of the computer or CD-ROMS is considered enough to fill the immediate need for picture viewing. Pictures are increasingly seen as disposable and situation-specific in nature (see Okabe & Koskinen, 2000:113). It can be asked whether photo albums are a part of a vanishing tradition. How will visual family traditions be transmitted from one generation to another in the future in case the pictures vanish from the computer as the hard drive is destroyed?

6. Ethnography and some methodological challenges

Above I have described the main features and approach of an ethnographic research on mobile image. According to Silverman, one of the strengths of observational research is its ability to shift focus as interesting new data becomes available (1994:43). In practice, even though we did adhere to the principles of 'active sampling', the study described here was not wholly unstructured, as would be the case if we had chosen to employ 'flexible research design'. One of the strengths of multi-method research is that the research in itself offers different kinds of data that can be examined side by side. In practice, the comparability of an ethnographic study to other ethnographic studies may be difficult as the sample of the study may consist of

very different users with greatly varying levels of competence. Any comparison should at least account for the backgrounds of the informants. For instance, students or professionals of information technology constitute a largely different group of users than people taking up a new device with zero experience. The information needs of the research will determine the types of informants selected for the study: is there a more general interest in long-term trends or perhaps a need to learn about new innovative usages? When reporting the results, it would be important to describe the background of the informants, as this has a great impact on the results of the study. Moreover, it would be useful to include information about the informants' use of other media and other socio-cultural aspects, such as family structure and family traditions, which have an impact for instance on the phenomena of mobile communication as they appear in the daily lives of the researched. In other words, ethnographic field experiments should also be interpreted within a wider societal context.

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Publication VI

Mobile Video – Between Personal, Community and Mass Media

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Mobile video

- between personal, community and mass media

Virpi Oksman

Mobile phones have been developing into versatile multimedia devices integrating different media forms, channels and delivery systems. Mobile video in 3G network phones enables the creation of personal video clips as well as viewing contents made by others, making video calls with friends and family and following different types of media contents, such as news and other TV broadcasts in real time. As the mobile phone has become capable of handling a variety of different media contents, it has become a medium used for various forms of personal, community and mass communication. Furthermore, traditional boundaries of mass communication have been blurred, as different mass communication contents are increasingly available to personal mobile applications.

This paper examines the appropriation and the significance of mobile video content and mobile TV in the everyday life contexts of end-users. The data for the research is based on two empirical research projects including field tests on mobile visual services, especially on mobile video calls and mobile TV services in Finland in 2005─2007.

1. Introduction

The opportunity to use moving image in mobile communication has brought important additional information to communication and turns the mobile phone into a real multimedia device. The possibility to share and publish user created mobile videos has expanded the role of mobile phone beyond simple personal communications. On the Internet, the enormous success of services like YouTube and Flickr has shown that there is public interest in video and image contents created by amateur users. User-generated contents multiply media content supply, and users have countless channels to access the content that meets their preferences. On public transportation mobile TV services can provide a feeling of being up-to-date all the time. For the user, mobile television contents are interesting due to their availability regardless of time and location. The most central problems concerning user experiences (as perceived by users) are the small screen and problems in the quality of the picture and reception (Cui et al. 2007, Oksman et al., 2007).

Thus with the development of services and equipment, the possibilities for mobile video have expanded greatly. Improvement in picture and video quality makes the use of different services increasingly user friendly. In this article I examine primarily two mobile video solutions that have the potential to be merged into the daily lives of users: the use of video call in the communication between family and friends and the use of mobile TV services via the mobile phone.

These services have been available for consumers for some time in several countries such as in Japan, South Korea, UK, Italy and Finland. However, market predictions concerning the adoption of new mobile technologies and services are sometimes based on over-optimistic expectations. Thus is important that future visions regarding ICT take also the actual behaviour of users in their specific contexts into account (Bouwman & Van Der Duin, 2007, p. 380–381).

The article aims to locate the meanings that mobile moving image and the video phone feature may have in the daily lives of people. What attitudes are expressed towards mobile video image among the respondents' friend and family contexts? What kind of leisure communication and interpersonal interaction does the video call generate between friends and family members? How is mobile video perceived as a medium for mass communication such as news delivery? What kind of mobile TV content do people choose to use in different situations?

2. Mediatization of the mobile phone

Communication technologies are typically multi-purpose tools that can change their major functions over time. Originally, i.e. in the 1880s, the landline telephone was used as a broadcasting medium. Back then it was not intended as medium of bilateral communication. The broadcast use of the telephone progressively declined before the invention of radio. However, the public found new uses for the telephone, mainly as an instrument of conversation and sociability for women. One important lesson from the history of the phone is that the users will often determine how communication technologies are used, and often marginally considered users may find successful uses, such as women and sociability, teenagers and SMS (Lasen, 2002, p. 7).

The mobile phone has been profiled especially as a unique communication device between friends and family and, the mobile phone is *the* absolute medium of relationships of all electronic media (Höflich, 2006, p. 3). Recent media convergence has enriched the mobile phone with various media functions, forms, channels and delivery methods. There is hardly any other single device, which has converged so many different technologies and functions (Gordon, 2002, p. 16). This development provides an interesting case of 'mediamorphosis', the transformation of communication media (Fidler, 1997). To be more specific, the mediatization process of the mobile phone can be defined as "the impact of the classic mass media on the fixed and mobile net" (Fortunati, 2005, p. 27). Especially the transition of GSM to 3G has been seen as signaling the evolution of the mediatization of the mobile phone, the culmination of which is the ability to follow TV broadcasts on the mobile (Fortunati, 2005, p. 33). Moreover, the mobile phone has some special characters of its own as a medium, as it is strongly connected to user generated content production. Text and image messaging and video phone features have generated new kind of interpersonal communication forms and cultures in the daily lives of people. For instance mobile images and videos taken by citizens have contributed to the illustration of many news events, and many news media, including Finland's largest newspaper *Helsingin Sanomat*, offer their readers the opportunity to send in pictures taken on their camera phones to their news website.

The opportunities of mobile video and TV have been studied in Finland and in many other countries through several field tests and pilot studies. For instance, Repo et al. (2002, p. 18–19) have explored the situations in which the

possibility of viewing video through the mobile phone could be the most convenient. The content of the tested mobile services consisted of news, cartoons and karaoke videos. An interesting notion was that viewing in public transport was labelled as unsuitable. People did not use earpieces in the test and the use of a loud multimedia device in buses, for instance, was construed as disturbing others and too conspicuous. The videos were used to fill up empty slots when waiting for something: queuing at the cashier while shopping or while having a break from homework. The users talked about the novelty wearing off: a few news broadcasts and cartoons were not experienced as inspiring enough as content in the long run.

Kasesniemi et al. (2003) studied the usage of mobile video in family and peer group contexts. According to the study, mobile video has possibilities for seamless and versatile fusion with the mobile communication and life management of the users. Users generally perceived the video as a good medium for communicating feelings and events containing a lot of movement. The use of the video function varied from documenting personal memories to directing small humorous clips. An interesting feature in mobile video was its utilisation as both personal and community media. Some of the captures were forwarded to other user communities and discussed later, while others were intended for individual use alone and stored either in the mobile terminal or on a desktop computer. Regarding community media, the potentials of the camera phones for local journalism and citizen communication have also been explored in Finland. It turned out that the camera phone can be a useful device in the communication of local communities. The pictures worked well to open public discussion, and the residents became eager to take their stand to the issues of region (Sirkkunen, 2004, p. 5).

The use of mobile TV contents have been studied in many recent use pilots (Dowell, 2006; Mason 2006; see also Kretzschmar in this volume). Quite typically, mobile TV services are used in the public space for example while waiting or commuting. They are used to kill time and to keep their users entertained or up-to-date. Whereas the public space is going to remain an important area for mobile TV usage, some studies have shown that mobile TV services are also used in the private sphere. Typically, mobile TV was used late at night, in bed, just before falling asleep (Dowell, 2006). Södergård et al. found out that against expectations, the test users clearly considered the mobile TV service to be a television, not a wireless multimedia service. The programs were selected by familiar channel, not by topic. The most liked feature was the possibility to

watch programs from the archive whenever possible (Södergård et al. 2002).

The findings of a number of studies made on mobile TV confirm that the most popular mobile TV content is news (Södergård 2002, Knoche & McCarthy, 2005, Mäki, 2005, Oksman et al, 2007). Other popular mobile TV content types are: music videos, sports, cartoons, movies, soap operas and sitcoms (Knoche & McCarthy 2005). News is well suited to mobile phones, because the duration of a mobile TV session often lasts less than 10 minutes[1]. The limited time of mobile TV use has ramifications for both the type of content and the way that people consume it (Södergård 2002, Knoche & McCarthy, 2004, Knoche 2005). Most likely, customized services that address specific interests of the individual user will become more important in the future (Grobel, 2006).

Based on the above studies, we can assume that mobile video can be used for a variety of different purposes; from personal to mass communication and from entertainment content to news. A core question regarding the development of mobile video services lies in user appropriation: how do the users experience mobile video and TV and how do they want to use it in different situations as part of their daily life? Moreover, the extent to which end-users will value the functional blending of mobile telephony - which people seem to experience more or less as a personal form of communication - and mass media broadcasting - and how valuable the mobile TV service would be for users is not yet clear (Picard, 2005, p.20).

3. The projects and materials

The data used in this article underlines the appropriation and significance of mobile video in daily life use contexts. The empirical research projects included field tests on mobile visual services, especially on mobile video calls and mobile TV services in Finland in 2005–2007.

The project entitled ‘Mobile Visuality’ was conducted at the University of Tampere in 2005. The research aimed to locate the meanings that mobile moving image and the video phone feature may have in the daily lives of people. What kind of leisure communication and interpersonal interaction is generated among people of different ages?

[1] In a Finnish mobile television pilot the average duration of mobile television use was 5-20 minutes daily. Only very active users viewed mobile television more than that – up to a maximum of 40 minutes per day.

The object of the study was visual mobile communication within family and peer group communities. The respondents were young adults living on their own and families with children and their grandparents or other family members with whom they maintain active contact. The emphasis was on personal, experience- and free-time-oriented mobile communication; the need for visual mobile communication was studied also in relation to the communication needs emerging from the combining of work and family life.

In all, 70 persons were interviewed for the study during 2005. The age of the interviewees ranged from 10 to 75 years. All of them used camera phones. For a period of 6 weeks, 10 people tested the video call. Personal backgrounds of the informants was varied: more than half worked full time, the rest consisted of school-goers and students, pensioners, parents on child-care leave and self-employed people working from home.

A subsequent project called 'Podracing' started at VTT Information Technology in 2006. The purpose of the project was to find out what kinds of mobile media forms (video, audio or text) people use in different situations. Parallel distribution of video, audio, and text over WLAN, 3G, and DVB-H for mobile devices was being tested. The focus of the research was on developing mobile TV technologies and services and enhancing knowledge of mobile TV content consumption, usage situations and user experiences.

The aims of the study emerged from the integration of different media formats and delivery technologies. The first phase of the study concentrated on different media formats: video, audio and text as on-demand services. The second and third phases concentrated on different delivery methods: content download and broadcasting. The primary question was: "If a user had the possibility to watch the latest television news on a mobile phone, or listen to the news on the radio or read text news on the mobile, which option would he or she choose?"

Three field tests were conducted during the project. In each test, the same ten test users used different mobile TV services with 3G phones for a period of one to three months. Before the test periods, the users were interviewed and they received information concerning the test. Demographic data was gathered from the users and media user profiles were made. The ages of the users ranged from 23 to 56. All of them worked at least part time. During the test period, the trial participants reported their user experiences in a test diary. After the test, the users were asked to fill in the service evaluation form and they were interviewed again. The interviews were recorded and transcribed. The evaluation form cov-

ered questions such as navigation and ease with which the different mobile TV functions could be utilized. The test users were also asked to assess how enjoyable they found watching the news and other media on the screen of the mobile phone. The log data of the use the services was collected and analyzed statistically.

The test groups consisted of persons who have been using mobile services actively during the last few years. They were keen news and media followers, but they had different kinds of media-user profiles. Some of them were very loyal newspaper readers, while others regarded the Internet or TV as the best news or entertainment source. The test users had different kinds of hobbies, lifestyles and interests. During the tests, they carried the test phone as their primary mobile, using it for both professional and personal communication.

The tested mobile TV services consisted of a wide range of different kinds of content: from all the main TV channels to sports and news channels, and from fashion TV to user-generated content. The reliability of the 3G and DVB-H networks and the quality of the video, audio and text content were also examined.

4. Mobile video and telepresence

The people interviewed for the ‘Mobile Visuality’-project were asked about the significance of mobile video in the friends and family context. When compared to more traditional means of photography, mobile images and videos are often seen as disposable and situation-specific in nature (see also Koskinen, 2000, p. 113)

Mobile videos are used quite often to share common experiences, thus strengthening the sense of family and friends communities. For example an older couple told about their travel with friends. Later, the friends received a mobile video by which to remember a shared karaoke performance on their common holiday. Many users of camera phones perceived the video as more expressive than still images: it transmits more of the information, emotion, sound and atmosphere. The situation and movement are captured more accurately. This is seen as particularly important when shooting the activities of children. The parents of 2 year old Otto were using mobile video to communicate with each other and their relatives during the day.

- *I: Do you yourself prefer receiving video or still image?*
- *R: With our Otto's (the 2 year old son) speaking as such a new thing, if my husband sends me a video with Otto saying mum, so I absolutely love having the sound in it. Although I suppose you could get sound for the still pictures, too.*
- *R2: There are situations where you can't explain what's going on with a still picture without attaching text to it. For instance Otto dancing with the bunny, if you had just taken a picture, you would have thought, oh, he's carrying a bunny, what's so special about that. But when you could see the dance steps and a bit of commotion going on there, you could get the context in a different way and it was funny. That wouldn't have worked at all as a still image, really. (Woman, 32, Man, 32)*

New technology, MMS communication, videos and web cams have assumed a powerful role as the enablers of a new kind of 'telepresence', or new intimacy to share experiences and feel as if the absent friends and family were there to witness the occasion (Kindberg et al., 2005: 46). With many young families, grandparents live in different localities and the distances can be long. Thanks to new visual communication, such as mobile imaging, Messenger and Skype, the grandparents are able to follow the daily life of the family and the child's development on an almost real-time basis. Absent friends or family members are the ones often receiving MMS messages also in British and Japanese studies (see Kindberg et al 2005, Okabe 2004).

5. Video calls: friends and family

During 2005 ten informants were testing video calls. Video calls were seen as a very positive and fun form of communication. They were experienced as more private and more personal than a phone call or SMS. A video call was seen as suitable for communication with close friends and family members. It was estimated as a very effective form of communication, having a high value on documentation. The first calls were more experimental in nature: talking to the camera took some getting used to. The calls only lasted for a couple of minutes.

> *I showed my DVD's on the shelves to Laura, options for her to lend from there. You can do stuff that is more concrete. And you rather make the video calls in your private space than in public as you can't*

really make them as unnoticeably as regular phone calls. (Man, 20, student)

Later, the use became less affected, enabling 'normal' conversations and the calls became longer, lasting up to 10 to 15 minutes. The informants saw video calls perfect for family purposes: as the calls got longer, the speakers wanted to involve all the family members[2].

I loved talking to my 2-year-old goddaughter. First we were both a little shy, but after a little while she was laughing and screaming at me as I was showing her familiar things. (Woman, 36)

According to the testers, video call is more engaging activity than voice call, partly because it does not allow so much for simultaneous 'parallel activities' (activities such as walking, driving, browsing magazines and watching TV are common during a voice call). The testers estimated video calls to be a perfect product also for relationship communication.

[2] Also in Japan, video calls have been marketed for family use, as a technologically easy solution suited for communication between grandparents and children.

Picture 1: Video call was seen as suitable especially for communication between grandparents and grandchildren living in different locations.

According to the mobile news service log data gathered in the 'Podracing'-study, the service was used daily during the research period. Out of the various media formats on offer, television was the most widely used, and in the realm of news, the categories sports news and foreign and domestic news attracted the most interest. The service use spread relatively evenly for the whole day (see the chart 1), although use was more frequent in the morning and after six in the evening. Situations where the user is unattainable by regular media were considered as best suited for the use of the mobile news service. For example, while spending a holiday at a location where no fresh newspaper was available, an assiduous news follower began to crave for an additional link to the outside world.

According to test diaries and interviews, the service was used in different everyday contexts: in the bus on the way to work, on a train, on vacations abroad, coffee breaks at work and at home before bed. One of the peak times was actually at eleven o'clock at night. One test user talked about watching news on the mobile as the last thing he does at night.

> *I have this habit that just before bed I tend to fiddle with my mobile phone. It kind of settles you down.* (Man, 23)

Compared to earlier studies, the use of earpieces with the mobile phone has become increasingly common and makes it possible to follow media contents, for instance, in public transport without disturbing others. With the increased use of iPods and MP3 players, using earpieces on in public places has become a common occurrence and the use of mobile services no longer occasions surprised looks in passers by.

The mobile news service was considered relatively fast in comparison with other media. The service was expected to be updated continuously. It should

offer the latest news, and not broadcasts which had already been received in other media forms. The speed of the service concerning both content and function was important. The news service was found most reliable when it offered the latest news without there being too much effort involved in using it.

The testers compared and assessed the reliability of different media through a variety of viewpoints. Some considered that despite its reliability the newspaper may be unable to compete in speed with electronic media ─ occasionally, printed news may already be dated as it comes out. Some continued to value the reliability of newspapers despite their slowness: they assumed that electronic media may publish anything without verification.

> *"The image of newspapers is reliable but it is incredibly dated. It's pretty slow compared to the Internet in that the situation can have changed by the time the paper comes out."* (Woman, 26)

> *"These days it is possible for anyone to produce electronic media. If we talk about reliable media, that for me is print media, national newspapers (such as* Helsingin Sanomat*) or the major TV channels. If you get it through some other channel, you start thinking is this a joke or something somebody's made up."* (Man, 42)

Video was deemed the most interesting form of media in the mobile phone. The huge information value in the video image was also considered important: the opportunity to condense things and explain them in an understandable way in a short time. Text was generally considered to be the most reliable form of media. It is suited for many different situations and accessible in situations where other forms of media are not, for instance due to network problems. Some perceived the small screen of a mobile as convenient and surprisingly well-suited for the use of media contents; some were of the opinion that the small screen hindered media use.

> *TV was the most interesting to me. The thing I used the most was TV news during coffee break at work. That way I came to show my friends that I had a TV in my mobile. Some thought, well, you always have to have the most recent gadget. Others said, ok, that's interesting, but the screen is very small. You could make out what it is,*

but the size of the screen caused a little doubt, whether or not it's worth it. (Man, 56)

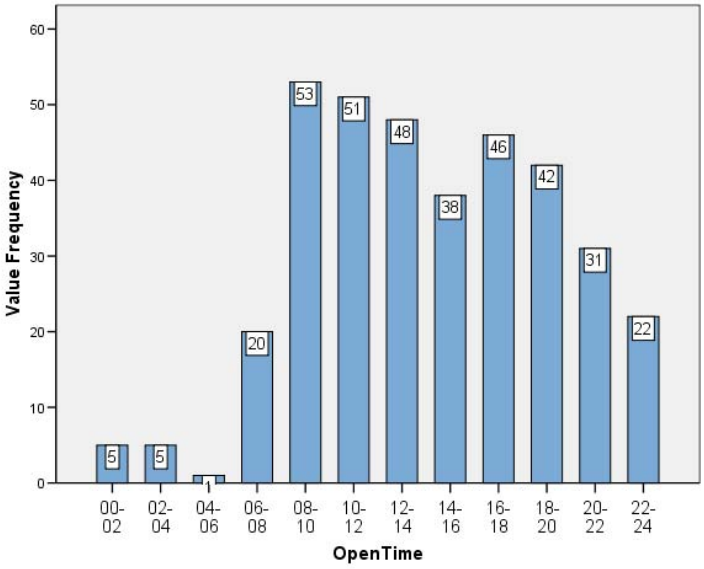

Chart. 1. The prime time of a mobile news service.

The ability to select the media form suited to the situation at hand was considered important. Audio was perceived as being suitable for situations where the user was mobile, e.g. while walking, cycling or roller skating. For situations when the user was sitting or standing still, the media format selected was more likely to be illustrated news, text or video.

> *"The media format (text, video or audio) has more significance when it is associated with situations you find yourself in. If you need to know the general contents of a specific item of news, then I'd opt for a moving image, kind of like news broadcasts on TV, that's condensed information. If you want a more in-depth view, you read from the paper or an electronic service. That is a different viewpoint. When there is an interesting item of news and you want to find out more about it, then a text media like that is just what you want."* (Man, 42)

The use of the mobile media service raised a discussion in the immediate circle of the test users. The general view was that its use was best suited to situations where other media were not available or where people found themselves with time on their hands. They could use the service while waiting for someone, during their break from work, or while travelling on public transport. Users described it as a nice way of passing the time.

> *At work and where I study I would be with others, at home and in the bus I would use it on my own. It generated a lot of discussion about how it would work, what you could use it for and how nice it would be. For us mature students coming from different parts of Finland this would be really good as we tend to travel a lot from place to place. For when you're sitting on a train or in a bus or for lonely nights in student housing when you don't feel like going out.* (Woman, 34)

According to log data, the average viewing time for mobile video is relatively short, about 5 minutes on average. Mobile video is thus best suited for quick updates and the viewing of trailers or advertisements for upcoming TV shows: not many people would be interested in watching a whole episode of a TV show or a movie on the screen of a mobile at this stage.

> *A movie would be too long to watch on this, but I suppose you could have some trailers that you could have a peek at when you're deciding on a film you want to see. I could imagine that ten minutes is the maximum you could maintain an interest in something like that.* (Man, 56)

When the users had the opportunity to choose to receive news in different media forms in their mobiles, text format was the option opened most often. Typically, users perceived the text news format as being the most convenient for various kinds of situations and especially suitable for quick news headlines updates "on the go". The text-based news format was also seen to be less susceptible to the functional problems of the 3G network. However, regarding the total amount of time, the video news format was used the longest. It seems that video news viewing is actually done more rarely than opening text news, but as soon as the

reception is good, people like to watch the news broadcasts for a bit longer than just a glance.

Although audio was seen as an easy-to-use media format, it was quite rarely seen as interesting and fresh. The number of sessions of listening to audio news was relatively low, but the average duration of the sessions was of the same magnitude as in watching video. The mobile phone in use (Nokia N70) had radio implemented in the phone, and the users preferred listening to it in real time instead of selecting news articles from the service.

Regarding the entertainment contents, mostly the same contents as on regular TV were watched, but also special channels were popular, e.g. a channel focusing on local cultural events. Thus familiarity was the most used criteria in choosing the TV channel. The test users mentioned the major Finish channels (MTV3, Nelonen and YLE) as the channels they watched most often. Moreover, the mobile TV changed their watching routines by offering the possibility to follow their favourite programs regardless of their location. The viewing duration was shorter than usual, and they watched only the most essential or interesting parts of the programs.

> *I could not watch the movies until the end, but watched them for about 15 to 20 minutes. I think I watched news more than usual.* (Woman, 29)

Also, certain reality TV series that the users want to keep up with in real time were mentioned as interesting contents. During the test period an obvious example of this was the reality TV show Big Brother, which in addition to television, was followed also through other media. The most avid follower was a 27-year-old female student, who explained that it was essential to follow the daily events at the house from mobile TV while she was away from home.

The expectations towards mobile TV changed after the first testing periods. The test users expected mobile TV to offer additional services to conventional TV and media. There was a demand for extra services, especially for more real-time and specially tailored content for mobile TV. The users stated that a mobile television service should be able to give a feeling that the user actually knows more than others. Producing that kind of a real-time service is challenging, especially in the present media environment where everything is online within ten minutes.

6. Mobile media – media on the move

Although the studies were constructed around testing services in their relatively early usage stages with small test groups, they yielded certain interesting results on the uses of mobile video in different contexts of people's daily lives. The empirical research shows that a device optimised for voice and text communication can offer users an interesting visual experience such as video calls and mobile TV news. The mobile phone as media is suited for many different situations in everyday life

As personal communication devices are turning into multimedia communication devices delivering news and other mass media contents, new questions about user experience challenges will emerge. Contents designed for different media can rarely be directly utilized in new distribution channels and usage situation. For instance, usability issues regarding the small screen user interfaces will be particularly central. In the long run, it will also be important to discover what kind of existing and new media formats and distribution channels will best suit mobile media.

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The mobile phone: A medium in itself

Abstract

This dissertation examines the integration of the mobile phone into every day life as a communication device and as media. It focuses on the uses of the mobile phone as a pervasive multimedia tool and its relationship to other media in the changing media landscape.

The main argument of the dissertation is that the mobile phone is a medium in itself and it should also be regarded as a medium among others. In media studies the mobile phone has been perceived as a sub-media to traditional media. As a medium it has its own specific characteristics and social functions, allthough its uses may vary in different contexts and cultures. However, this argument does not mean that the mobile phone is a medium without user involvements. The role of user innovations has been important in constructing the mobile phone's role in the media field: for instance, text messaging has brought a new kind of social interaction and media form with it. Indeed, the mobile phone has influenced the ways in which we can interact with other media. The mobile phone is located between personal, social and mass media, and can serve personal, peer-to-peer and mass communication purposes in different communications situations. The mobile phone, along with the popularity of personal computers, has contributed to the increased consciousness and idea of personal media, and the emergence of new kinds of media behaviour. The mobile phone is not only a developing tool for citizenship journalism and participatory media making, but also a channel between traditional and new media, as it, in some cases enables the interactivity of television. Text messaging has been incorporated into television and, in some cases, also into newspapers. It seems that the mobile phone as a personal and ubiquitous technology may lower the threshold for participating in media making. The role of the mobile phone as a tool in digital storytelling has become more important as the number of reader's own photographs as news material in newspapers has increased. The newspaper offices and other media have to find a solution for how to act with the increasing content produced by their audience; for instance, how to find the important news and verify the reliability and originality of the material. The copyright issues with amateur content producers are also gaining more significance.

Yet, the physical user interface of the mobile phone is quite different from other media. This means that in the media production stage, the media content has to be tailored so that it can be accessed with a mobile phone and read on their small-screen user interfaces. Currently, there are problems related to the immature technology, such as mobile web browsing problems. Usability issues regarding small-screen user interfaces are particularly important. However, the size of the screen is not only a limitation but also an advantage, as in some cases as it can support the use of mobile media services in various places and situations. Other limitations, such as battery life and network coverage problems, may have an influence on the quality of the user experience as well.

The mobile phone enables an instantaneous news, information and discussion channel for the mass media. Indeed, the role of the mobile phone in participatory media making could be further developed in media companies. Furthermore, the possibilities of mobile phones are not yet fully utilized in crisis communication. More likely, the role of the mobile phone as an interactive link between the personal user and social and mass media will increase in the future.

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How has the mobile phone integrated into everyday life as a communication device and as a medium? What does it mean to talk about mobile phones as media?

The mobile phone enables an instantaneous news, information and discussion channel for the mass media. As a medium it has its own specific characteristics and social functions, although its uses may vary in different contexts and cultures. The role of user innovations has been important in constructing the mobile phone's role in the media field: for instance, text messaging has brought a new kind of social interaction and media form with it. Indeed, the mobile phone has influenced the ways in which we can interact with other media. The mobile phone is not only a developing tool for citizenship journalism and participatory media making, but also a channel between traditional and new media, as it enables the interactivity of television. Text messaging has been incorporated into television and, in some cases, also into newspapers. It seems that the mobile phone as a personal and ubiquitous technology may lower the threshold for participating in media making. The role of the mobile phone as a tool in digital storytelling has become more important as the number of reader's own photographs as news material in newspapers has increased. Furthermore, the possibilities of mobile phones are not yet fully utilized in crisis communication. More likely, the role of the mobile phone as an interactive link between the personal user and social and mass media will increase in the future.

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