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From Mobile to Mobility: The Consumption of ICTs and Mobility in Everyday Life

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From Mobile to Mobility: The Consumption of ICTs and Mobility in Everyday Life

by

The COST269 Mobility Workgroup

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Version 3

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The current report (Version 3) has been updated by Leslie Haddon to take into account a range of publications, especially on mobile telephony, that have appeared since the original work. The update was finished on 16th October 2002

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1. Aim of the Paper and its Background

Aim

The aim of this paper is to chart the relevant studies and research questions concerning the relationship between ICTs and Mobility in Everyday Life – a concept defined and delineated in a previous paper *An Agenda for 'Mobility in Everyday Life' for ICT Researchers* (Haddon, 2000a).

History: 'From Mobile to Mobility'

Projects such as this usually have a history. In the COST action which preceded 269, 248, one of the workgroups focused on a particular ICT, that was at the time relatively neglected in social science research – the mobile phone. The result was a report bringing together many of the limited number of European studies which had been conducted on mobile telephony at that stage (Haddon, 1997).

In this subsequent COST269 action, the decision was made not to concentrate primarily on the technology per se but on how it relates to a certain dimension of our everyday lives – our mobility¹. Research on the mobile phone continues to play a prominent part in this paper, but we extend our remit to consider both other mobile ICTs and ICT in general, especially the Internet. It is against this background that one can appreciate the title: from mobile to mobility.

European Research

The research cited here is predominately European since this is the literature we know best. While one cannot claim that these observations cover all European research when assessing what has been studied in this area, the contributors or their colleagues have conducted studies in this field for many years, monitoring new research through networks, conferences and workshops. Finally, the membership of the COST269 action is such that these observations take into account research that has taken place within a range of telecom companies and which is outside the public domain.

¹ COST248 members were also responsible for initiating a EURESCOM project (P-903) which included some stress on certain dimensions of everyday life – time use, mobility and social networks – when considering ICTs. Some of the findings of the qualitative study from that project which relate to mobility are cited in this text as Klammer et al, 2000.

2. Rationale and Structure of the Paper

Causal relationships between ICT use and mobility

Mobility in everyday life is taken here to cover both travelling and spending time in sites outside the home². In both cases it was clear from the earliest discussions in the workgroup of some statistical data that one would not necessarily expect to find many straightforward causal relationships between ICTs and various aspects of mobility.

- For example, in Italy there was less mobility in terms of travel compared to some other European countries, but where there had nevertheless been an explosion in mobile phones sales (ISTAT, 1998).
- The workgroup discussed how French data indicate that people who go abroad do not use the mobile phone more if they travel a longer distance.
- Despite the fact that Scandinavians have more mobile phones than the French, it was pointed out that time use data show that the French spend 10% more time in sites outside both the home and workplace.
- One 9-country European survey conducted in 2001 found that various measures of mobility did not predict adoption or non-adoption of mobile phones – but this reflected the fact that by this stage overall adoption rates for this technology were high³ (Mante-Meijer and Haddon, 2002)

Only occasionally do we find some correlations:

- For example, the US study showing that at least in the early stages of the mobile phone market, owners tended to be more mobile both in work and socially (Katz and Aspden, 1996).
- More recently a Swedish study has shown that travel is positively associated with frequency of contact with people through media of communication⁴ (Persson, 2000).
- The 9-country European survey cited above found that Internet users have occasional overnight stays away from home more often than non-users (Mante-Meijer and Haddon, 2002)

Other dimensions of mobility

² While in principle this would include worksites, in practice the interest of this COST269 action is in non-work usage of ICTs and so the workplace becomes only of interest to the extent that personal use of ICTs takes place there.

³ For example, among other variables considered was the amount of nights people stay away from home: for work purposes or for private ones, like holidays. But the adoption levels for the mobile phone for those who 'stay at home' were high as well as for those who spent time away from the home.

⁴ Travel in this study included movement on foot, cycling, car and public transport while communication covered fixed phone, mobile phone, fax, e-mail and other forms of Internet contact. The general conclusion of another Swedish empirical study is that the use of telecommunications has led to a decrease in travelling, but on the whole that both travelling and transportation increase every year. The authors propose that the future research should ask about the in which way patterns of mobility will change, rather than whether we will travel more or less (Rapp and Skåmedal, 1996).

Yet, there are many other dimensions of mobility that we could consider, as well as exploring the relationships between ICTs and patterns of travel in more detail. These include:

- the planning and management of travel
- the subjective experience of travelling
- the use and meaning of travel time
- the experience of being in those other sites outside the home

Some of these topics might be addressed in statistical analyses but others might be more amenable to qualitative research.

Stages in the output of the Mobility Workgroup

A first stage in the workgroup discussion involved developing a sense of the specific features of different type of mobility ICTs (captured in the paper, Haddon, 2000a) as well as information about data on mobility trends and patterns in order to use this as background knowledge for posing questions about the relationship between mobility and ICTs.

The second stage, reflected in this paper, was to try to outline that relationship, note existing relevant studies and specify what research would have to be done, if there are questions we cannot yet answer.

Structure of the Paper

The first section considers how patterns (or changes) in mobility might influence how people experience ICTs – covering not only adoption of the technologies and usage but what they might mean to people given their particular circumstances.

1. After some introductory observations on this theme which locate mobility in a wider context we move on to consider the mobility patterns of some specific social groups.
2. Next we consider some of the general factors which have influenced people's mobility patterns, noting the various different types and dimensions of travel behaviour, before focusing on two particular types of mobility: commuting and travel abroad.
3. Finally, this section considers behaviour in, and expectations about, different public spaces and what bearing this has upon our use, and indeed management, of ICTs.

The second section considers the influence that ICTs can have upon our mobility in everyday life.

1. It first covers the bearing which these new technologies have upon the way we organise and manage our travel behaviour and the way ICTs can influence actual patterns of travel.
2. In particular, we consider how the availability of certain ICTs can influence the experience of travel abroad and the use we make of travel time.

3. The last parts of the section cover the influence ICTs have on our options to be in different public spaces, interaction with others in these spaces and changes in our subjective experience of mobility.

The third and final section stands back from the detail of the interrelationship of ICTs and mobility to consider some wider issues.

1. The first covers the nature of social spaces in order better to appreciate the reactions to mobile calls both of those co-present and of mobile users.
2. The second deals with ICTs and issues of surveillance and privacy in sites outside the home.
3. The third shifts the analysis to locate questions about ICTs and mobility within an environmental agenda.
4. The last deals with the role of mobility within modernity and its implications for ICTs.

3. Mobility affecting ICT Use

Before commencing with the more detailed discussion of mobility and ICTs it is worth making two general observations.

The importance of mobility

The first concerns the importance of mobility for people's experience of ICTs compared to the influence of other aspects of everyday life. The *Agenda* paper indicated how the focus on the consumption of ICTs in everyday life has to date been predominately on the home. This has neglected the time spent outside the home and the role of ICTs when we are on the move. Hence the rationale for this more systematic academic stocktaking of what we do and do not know about this dimension of life.

However, just because mobility is the subject of this paper this does not mean that a priori mobility is assumed to be the most significant influence on our consumption of ICTs. Far from it.

- For example, it was noted in the *Agenda* paper that the last decade has seen a variety of empirical and theoretical analyses showing how important people's home life is for the way in which we encounter, understand and deal with ICTs (Haddon, 2000a).
- Even as regards portable technologies such as the mobile phone, the fact that it is a 'personal phone' may have contributed at least as much to its adoption than any advantages it provides relating to people's pattern of mobility⁵.
- And the pattern of people's mobility per se may well be of less significance than the reason for that travel behaviour in the first place – i.e. the activity for which one travels.

⁵ For example, the personal phone helps to overcome some problems associated with households sharing a collective, fixed line (problems identified by de Gournay, 1996).

Mobility and time

In addition, as the time-geography tradition⁶ would emphasise, movement through space often needs to be considered in combination with time, including the timing of travel.

- For example, it is the fact that we are out of the home or underway at certain specific times that sometimes gives rise to the need to communicate electronically.
- Perhaps this should be seen in the wider context of what Ascher has called the ‘desynchronisation of family life’, where the fact that individual family members either feel compelled or have more freedom to do different things at different times means that the home base becomes likened to a bus station or airport, with people ‘passing through’ giving rise to the problem of synchronising time together.

Differing time scales: Changes in mobility and the development of the ICTs

The second general observation is that it proved far easier in the discussions to consider how the arrival of newer ICTs might potentially affect mobility than vice-versa. Or more specifically, while we could think of how different patterns of mobility (around gender and age, for example) might have a bearing on patterns of ICT consumption it was more difficult to contemplate the effects of changes in mobility over time.

This is because:

- Many of the changes in mobility in society, outlined below, took place over relatively long periods: covering decades or even generations.
- In contrast the rate of technological innovation in the ICT industry is such that services and technologies such as the Internet and mobile phone (as mass markets) have by comparison been with us for a relatively short period of time.
- Although the more established ICTs, such as fixed line telephony and television, have been in homes for a longer period which is comparable to the time scale of some changes in everyday mobility, the relationship between the mobility and these ICTs does not appear to have been systematically explored.

Changes in mobility as a pre-condition of ICT consumption

However, one way of thinking about the relation between changes in mobility and more recent technologies is that the former set the pre-conditions for the reception of the latter. Referring to a range of innovations from an earlier era, Raymond Williams argued that the spread of certain ICTs in the UK at the start of the 20th Century (e.g. photography, gramophones, cinema) as well as the growth in popularity of media such as newspapers reflected the greater geographical mobility that was occurring at that time as people moved to live and work in different locations (Williams, 1974). This led people to take more of an interest in these new ICTs (as they were then) that preserved memories and helped those who had moved to keep in touch with what was happening in the places where they had come from.

⁶ This tradition is known to some of the Mobility Workgroup but is not familiar enough that we would choose to draw upon it very often in this text. We would invite those more familiar with time-geography to comment as appropriate.

In other words, changing social experiences made the time period especially favourable for these new innovations. The same type of argument could be suggested here⁷. In this case, we might speculate (also argued in Townsend, 2001) that growing mobility in everyday life has helped to create the positive reception given to a range of ICTs, including both mobile phones and aspects of the Internet, through giving rise to more occasions when such ICTs have been perceived as being very useful.

3.1 Mobility and ICTs: Social Groups

3.1.1 Age: The Mobility Patterns of Children

The shift to the home

The changes in children's pattern of mobility are complex⁸. There are claims that more generally social activities which in the past took place in public are increasingly taking place in the home, which is itself becoming more public, more open to outsiders (Wellman, 1999). Children also experience this, having their friends around to interact with them in their homes, in their own rooms. We would expect that this would have some impact on their consumption of ICTs in the home, and may well have contributed to the growth of personalised ICTs owned by children – i.e. their own TVs, VCRs, PCs and Internet access – as those children spend more time at home and parents try to create a stimulating environment to keep them occupied.

Concern over children's safety in public spaces

Over the last decade or two, part of any trend towards children spending more time at home (as opposed to spending time out of doors playing) may also reflect another process. Perhaps more true in some countries or areas than in others, there has been a growing concern for children's safety in public spaces. A recent British study of children and ICTs noted how parents felt under pressure to keep their children indoors (Livingstone and Bovill, 1999)⁹. And because of these parental fears of the streets there has been a shift to a situation where the vast majority of children, at least in Britain, are now driven to school. But we also know that for a variety of reasons parents buy mobile phones for their children. *Hence, there is a question about the extent to which parent's fears for their children's safety when the children are out enters into this purchase decision.*

Greater participation in organised activities away from home

⁷ To be fair, this type of argument about changing social contexts favourable to the mobile phone has been made in relation to changes other than in mobility: for example, it has been argued that changes in the public sphere and forms of sociability aided that success of the mobile phone (de Gournay, forthcoming).

⁸ And a further distinction needs to be made about the differences between younger and older children. Ling observes that younger children's spatial mobility is more limited compared to (older) adolescents whose social networks more geographically more widespread (Ling, 1998).

⁹ In another study covering Brazil, Chile and Argentina, fear of the dangers of the street had meant that parents preferred their children to stay home.

However, this move into the home is not the whole story. In fact, the other trend in children's mobility results from children's and youth's greater participation in organised activities away from home and, as noted above, visiting friends in their homes. Some years ago a German study noted the impact that this had on children's use of the fixed phone line – the phone was used more to organise such meetings and to fix appointments (Büchner, 1990). But this form of mobility also leads to parents ferrying their children around to different places, as well as to and from school. Certainly one recent European qualitative study noted how the mobile phone facilitated the co-ordination between parents and children who had to be picked up (Klamer et al 2000). *Again, so we must ask whether this pattern of mobility and the logistics it necessitates has contributed to parents acquiring mobile phones for their children (as well as for themselves).*

Mobility and divorced parents

Finally, taking a very different tack, the increased rate of divorce has meant that more children spend at least some time in two homes – and they spend time moving between homes. One recent Norwegian study noted that if the children had mobile phones it was useful both for the father to keep in touch with them without having to go through the mother and also to co-ordinate logistics when the children were visiting him (Ling and Helmersen, 2000). And a British earlier study had noted in addition that spending time in two homes meant that there was a pressure to duplicate ICTs (e.g. satellite TV) for the children in both homes or else it lead to children carrying portable ICTs (e.g. Gameboys) between homes (Haddon and Silverstone, 1995).

3.1.2 Gender: The Mobility Patterns of Women

Increased mobility

A variety of constraints on the mobility of women, especially those with young children, were noted in 1980s research (Tivers), one key factor being lack of access to a car (Pickup, 1988). To a degree this latter constraint has changed since that time as women's greater entry into the labour market has increased pressure for second cars or for shared use of cars (Salomon et al, 1993). Certainly, recent qualitative research which explored the subjective meaning of mobility, and the car in particular, showed how this change was interpreted as bringing more freedom and independence by many women (Klamer et al 2000). That said, One Norwegian study shows how women still work nearer to home than men, which has a bearing on the nature of their commuting (Hjorthol, 2000).

Emergencies when mobile

This is the backdrop to the significance of mobile phones for emergencies – including its usefulness in the event of the car breaking down. Statistics have consistently shown that women are more likely to say that they acquire the mobile phone for emergencies¹⁰.

¹⁰ For example, the European 5-country study (France, Germany, Italy, Spain, UK) conducted for Telecom Italia in 1996 and a 1999 survey for British Telecom's Digital Life Programme.

The nature of women's mobility

But over and above the question of whether women's mobility has increased there are also questions of the particular nature of that mobility and its implications for ICTs. For example, research also notes that women often combines more trips through a number of different spaces when travelling compared to men. And in the section above (3.1.1) we noted how the children were being driven to and picked up from school and other activities. *It remains to be seen how much this responsibility falls disproportionately upon women and whether the logistics involved has any bearing on the adoption, use and usefulness of mobile phones.*

3.1.3 The Mobility Patterns of Different Social Groups

If for a moment we reconsider the previous section, nowadays it is probably more common to focus on gender relations and differences rather than to consider women's patterns of behaviour as differentiated from some 'norm' defined by men. However, the studies cited above were originally framed in terms of looking at women's mobility and hence the decision to consider women as a social group was retained here. Likewise the studies of children as a group rather than a focus on age patterns.

Factor's affecting the mobility of elderly people

If we keep to this approach, the comments on children's mobility have not exhausted all that there is to say about age, and within all the age categories the other one where we might expect to find distinctive patterns is the elderly, by virtue of retirement from paid employment (which implied travel requirements and time constraints), their family circumstances (when children have usually left home), their wider social circumstances (for some meaning economic constraints) and their physical capabilities.

To list these points is not meant to provoke stereotypes of old age – especially given the substantial involvement of elderly people in alternatives to work, the relative affluence of some of this group, the on-going commitments of many to and interaction with their wider family and the level of fitness, as well as health, which (especially 'younger') elderly people can enjoy (Haddon and Silverstone, 1996). Instead, the list is meant to indicate that at this stage of life with its attendant circumstances and options we might anticipate more scope for changes in patterns of mobility.

The elderly of today and of tomorrow: cohorts of elderly

Of course, how much any change in mobility patterns with retirement actually influences the use of ICTs remains to be seen, given that this age group seems in general to have used technologies such as mobile telephones and the Internet less during the early years when these ICTs emerged as mass markets. On the other hand, it might be misleading to extrapolate too much from those early years both because

many of the elderly might be later adopters¹¹ and because we have the year by year process whereby more people retire who have been accustomed to using such ICTs in the course of their working life.

The mobility of the economically inactive

One of the reasons for justifying an interest in the mobility of the elderly was the fact that most are 'economically inactive' and outside the spatial-temporal demands of paid employment. But of course, they are not the only ones in this position. Other economically inactive sections of the population include:

- 'Housewives' (or 'househusbands'),
- Some lone parents
- Carers.
- And while by definition 'economically active' because of their availability for work, the unemployed might also be expected to have different mobility options and constraints.

Generally, we might speculate that the patterns of mobility between those in and out of paid employment vary¹². Of course, being without the personal income from paid labour can itself provide a constraint both on patterns of mobility and on the ability to acquire access to and use ICTs¹³. *However, as many ICTs become cheaper or access becomes possible via public provision (such as in Government or EU schemes¹⁴ to enable Internet access to the unemployed) sections of the population not in paid labour, which have rarely been first priority in company-sponsored research, might merit more attention.*

Social class and mobility

Finally we have social class. Cross-cultural research on class is made problematic by the fact that different measures (and scales) are used in different countries.

Nevertheless, in surveys measures of class are routinely taken. Certainly we know that access to and use of different ICTs varies by class, and we might speculate that research exists showing that patterns of mobility also vary. *But we know of little research attempting systematically to explore and theorise the relations between the two¹⁵.*

¹¹ One qualitative study noted how young elderly who had not adopted the VCR when it first appeared and while they were working acquired machines, as gifts or purchases, as they retired (Haddon and Silverstone, 1996).

¹² Probably the most extreme case being that of the homeless.

¹³ One has to be a little careful about this argument when addressing the financial resources of housewives - their sense of discretionary income very much depends on the way family finances are handled within the household, and the system used varies. There is evidence of the effect of income in a British qualitative study of lone parents which indicated how the financial constraints experienced by them had implications for access to, but also interest in, ICTs (Haddon and Silverstone, 1995). The implications of this for social exclusion were explored in a later article (Haddon, 2000c).

¹⁴ For example, ATTACH, DALI, EPITELIO, EQUALITY and INFOSOUND.

¹⁵ There is some relevant evidence from a British qualitative study of the consumption of TV by social class AB (managers and professionals). This was not directly concerned with mobility, but one reason why relatively little TV was watched by this group was because they were out of the home so much - mainly related to work commitments, but also to such factors as investing time in their children's interests and driving them around to their various activities (Silverstone and Haddon, 1996). This

3.2 Types of travel and ICTs

Factors that have increased mobility

The comments of focus groups from a recent European qualitative study illustrate a variety of factors, which have over the past decades increased their mobility (Klamer et al, 2000).

- Transportation options have improved over the years – with the greater availability of the car especially but also (in many countries) better and faster communal transport for medium to longer distance travel (e.g. railways, flights) .
- Travel had become more affordable through lower prices and the improved economic circumstances of many people (at least in some countries).
- Geographical horizons have altered as what before had been ‘far away’ was now more reachable.

One of the reasons for more day-to-day voluntary mobility is quite simply that there are now more options and choices (especially relating to leisure), there are more things people can afford to do and people have more free time to do these things. In many cases, participating in these activities requires more travelling.

- In some countries people now spend more leisure time away from the home at weekends (at second homes, having weekend breaks or simply going out for the day).
- Increased mobility is also related to the spatial dispersal of friends and relatives, itself reflecting greater geographical mobility (i.e. moving to live in other places) and many people make new friends over a wider geographical area and so more travel is required to see them.
- The processes of sub-urbanisation itself, accompanied by the changing spatial location of shopping and leisure facilities and living out of town, has necessitated more travel.
- Finally, people have more holidays abroad, often going to more distant locations and they commute more and over longer distances.

Studies of mobility and ICTs

From this list of reasons for changes in mobility it is also clear that there are many types of mobility, for different purposes, with different degrees of ‘routineness’, choice and obligation (Haddon ,2000a). There have been some attempts to explore what implications such types of travel have for the mobile phone.

- For example, a French study in the mid-1990s considered such factors as how the duration of trips, purpose of trip and length of the trip affected mobile phone use¹⁶ (Boullier and Chevrier, 1994).
- Another study explored the difference in mobile phone use when comparing straightforward commuting (from home to work) with journeys combining commuting and leisure travel (Marzloff, 1999).

example also reminds us that mobility patterns affect the consumption of more established ICTs such as television as well as the more recent innovations.

¹⁶ Although at that time the mobile was clearly not so widespread as today.

But obviously there is scope for exploring more systematically the different types of mobility and their relation to ICT use. The two examples considered below are commuting and travel abroad.

3.2.1 Commuting and ICTs

There are a few general observations to make about the phenomenon of commuting:

- In one sense it is not such a large part of the total amount we travel, accounting for 20-25 % of total mobility (Jansen, 1993).
- But it is strategic in a number of senses. Transportation planners are concerned about peak travel times and congestion, with its implications for the reliability of travel time (Salomon and Tacken, 1993).
- And it has been noted that work is an example of an activity with ‘temporal dominance’ around which other activities are organised (Salomon and Tacken, 1993). This means that commuting is a main form of mobility around which other travel is fitted in terms of the timing of travel and combining journeys.

Changes in commuting

In terms of changing patterns over time, commuting has increased due to the greater participation of women in the labour force. Meanwhile, distances commuted have grown across Europe in the last 20 years reflecting the process by which populations and jobs have become increasingly decentralised (Jansen, 1993).

The meaning of commuting

A recent European qualitative study explored what commuting meant subjectively to people (Klamer et al, 2000). In fact, it is not perceived as a ‘problem’ for some people, either because it has become a taken-for-granted activity part of modern life, because in some areas commuting is not so difficult or because the ‘personal time’ experienced during commuting is itself appreciated (see the later discussion of ‘using travel time’ – section 4.4).

On the other hand, for other people, perhaps more so in major towns and cities, commuting can be stressful. And this research indicated how it can impact on other activities and hence the rest of people’s mobility patterns if they are tired after commuting and prefer to spend free time at home rather than face more travel.

Research on commuting and ICTs

We have the impression that the relation between commuting and ICTs has not been researched so much (except in relation to the telework literature, to be discussed below).

1. *One potential line of research would be to identify for whom commuting is problematic and/or whether commuting is becoming more problematic (e.g. with increases in the number of cars on the road).*
2. *We could then ask whether, in these circumstances, certain sections of the population feel that ICTs would be more useful for them, perhaps especially so if the longer distances covered imply more potential for travel problems. Hence, for*

example, would transport information systems or traffic news come to be perceived as being useful for aiding commuting decisions? If there is temporal uncertainty about how long commuting will take and if this trip is strategic in terms of fitting in with other journeys, does this imply that mobile communication – telephony or otherwise – becomes more useful for co-ordinating with others?

The timing of commuting

The other consideration is the timing of commuting. Research in 1990s suggested that while flexi-time at work did not itself have a major impact on the timing of commuting there has been a growth in the number of mid-day trips, partly as people shift flexible activities to off-peak periods but also because of the growth in the number of part-time workers (and business-related trips) (Salomon and Tacken, 1993).

In principle this deserves more attention because it relates to a point raised in the introduction to this paper about the problem of synchronising time between household members (and their social networks) if their work (and hence their commuting) occurs at different times. *The question is, does this in turn also imply more potential interest in mobile communication for the purposes of such co-ordination?*

3.2.2 Travel Abroad and ICTs

First, some background data.

- The number of trips abroad made in 1989 was 5 times more than in the mid-60s and international travel has filtered down through all the different socio-economic levels of the population (Potier et al, 1993).
- More recently in the 1990s the emergent budget flight business (e.g. GO, Easyjet, Buzz, Ryanair) have added to this as more people now make trips they would not have made before.

We might expect to find more information on the detailed ways in which international travel has changed in leisure and tourism studies – for example, regarding the extent to which more spontaneous holidays are taken, where the destination is only known shortly before departure.

The meaning of travel abroad

If these are the trends, what does this type of travel mean to people? In the European study covering subjective attitudes to mobility people were generally very positive about greater opportunities for international travel. It may not be, literally, ‘everyday’ mobility but it is appreciated, it has become easier¹⁷ and interest in travel abroad has been stimulated (Klamer et al, 2000).

Travel abroad and ICTs

¹⁷ Not only in terms of costs and options, but also through factors like the spread of foreign languages, especially English.

Later in this paper we consider how new ICT services, such as the ones available on the Internet, can affect that experience (and planning) of travel abroad (Sections 4.1 and 4.3). But if over the years that international travel has increased and is still increasing we might also take the view that this social trend has helped to create the potential demand for those new services (e.g. ones providing holiday-related information). *And there is the question of whether that rise in demand might go on to stimulate demand for current and future information services on mobile devices.*

Research of ICT use when abroad

We know of no studies that examine the way in which people more generally use ICTs when abroad, for example, on holiday. From various qualitative studies we see examples of people abroad using not only fixed telephony but also fax machines and e-mail (including from Internet cafés¹⁸) to keep in touch with their children and parents back home. *But this particular communication behaviour does not appear to have been studied systematically – nor does the use of the mobile phone in this context.*

Finally, there seems to be an absence of research on how people use other portable ICTs when they are abroad, ICTs ranging from the more work-related laptops to more leisure orientated devices such as music-playing equipment, portable interactive games and audio-visual devices. *To what extent do people take such ICTs with them and use them when they are abroad in order to bring some of their familiar world with them?*

3.3 Public Spaces and ICTs

3.3.1 Privacy issues

Privacy and the public payphone

Prior to the 1990s boom in mobile phones, we already had one type of traditional phone in public spaces – the public payphone. There were two studies of public telephone kiosks that cast some light on the later role of mobile telephony. A French study noted that immigrants, women and younger people were more likely to use public phone kiosks (Carmagnat, 1995). But that study also noted that while for some the motive for using kiosks was that they had no access to a fixed line at home, others did have such access but used public phones because they wanted privacy from other household members (e.g. younger people did this in order to escape parental surveillance). A similar finding emerged from a Japanese study of younger people who used public phones because of the lack of privacy at home (especially because it was very easy to hear phone conversations due to the thin walls in Japanese homes) (cited in de Gournay, 1996).

Privacy and the mobile phone

¹⁸ Lee, 1999.

Both studies therefore provide examples of a public space becoming in a sense more private than the home and we might extrapolate that the mobile phone meets the same need for privacy. Indeed this point is made in a Norwegian qualitative study (Ling and Helmersen, 2000) and it was noted in the 1996 European quantitative study conducted in France, Germany, Italy, Spain and UK when 14% of the whole sample said that they had used the mobile phone specifically because it provided some privacy (Haddon, 1998c)¹⁹.

3.3.2 Strategies for controlling mobile phones

Next we have strategies for controlling contact from mobile phones in public spaces²⁰. Such strategies have been noted in research on the fixed phone line in people's homes²¹ (Haddon, 1998c). Obviously that decision to control mobile communication relates not just to mobility per se. It relates also to factors such as times when people want to control their reachability and contextual details such as the nature of the occasion and the presence of particular others.

But the nature of the place, the social space, can also have a bearing on strategies of control. For example:

- A 1996 5-country European quantitative study noted above found varying degrees of willingness to turn on mobile phones in different types of space²² (Haddon, 1998c). Meanwhile, a Hong Kong study showed the locations where mobile users were more and less likely to make and receive calls (Wei and Leung, 1999).
- Other qualitative studies have explored in more detail the understandings that people have of appropriate behaviour in particular social spaces such as restaurants and the implications for mobile phone use (Ling, 1997)
- These studies have explored how mobile users negotiate the conditions under which the mobile is switched on or off, for example, when on holiday or taking a break in the Norwegian Hytte²³ (Ling et al, 1997).

There are also studies noting further strategies employed to control mobile communication besides switching the phone off (or indeed, choosing not to carry it at all). Sometimes, involving numerous examples, this has been conceptualised as

¹⁹ This is the weighted figure for Europe, allowing for differences in population between countries. There were small variations between countries (e.g. in the UK this figure rose to 19%) and younger people were more likely to mention this (in the overall sample over a quarter of 14-24 year olds referred to the privacy role of the mobile phone at a time when the mobile phone was not so widespread (Haddon, 1998e).

²⁰ Such control is in general referred to as 'de-communication' in some French writings - e.g. de Gournay, 1997.

²¹ This research covered blocking incoming calls by taking the phone off the hook or unplugging it, simply not answering, getting someone else to answer the phone, directing calls to certain times by telling outsiders when and when not to phone and using the answerphone to take calls or filter calls.

²² For example, to take the two extremes, there was a great willingness to have them switched on in the (relative privacy of) the car, and the mobile phones were most likely to be switched off at a play or show. Other spaces considered were the home, restaurants/bars, shops, buses/trains and other people's homes.

²³ A holiday home in the mountains or by the sea or fjord.

‘managing’ the mobile in public spaces (Ling, 2002; Palen et al, 2001). To give just a few examples:

- Qualitative studies have indicated how people turn the phone off when it rings or let it ring, both actions serving to direct calls to voicemail (Licoppe and Heurtin, 2001, 2002).
- They have shown people trying to be discreet when answering calls (Sussex MTEL, 1997).
- And they have shown them displaying signs to others co-present that they care that they might be infringing expectations about calls in those public spaces. Hence the mobile users may indicate that they are trying to deal with this by, for example, going to one side to take the call, or ‘speeding up’ the calls to bring it to an end more quickly (Licoppe and Heurtin, 2002).

Finally, the degree to which people want to control communications (in public spaces) appears to vary across cultures. For example, in a 5-country European quantitative study the Italians were (statistically) quite distinct to the extent that they were far more willing to have their phones switched on across a variety of public spaces (Haddon, 1998c). Meanwhile a comparative qualitative study of people in the US and the Netherlands found the American mobile users to be far more open to being reachable by other people. Hence using the mobile in public spaces was more acceptable, while the Dutch remained ambivalent about this (Mante, 2002).

4. ICTs affecting Mobility

4.1 ICTs and the Organisation and Management of Travel

We noted above the German study that showed the increasing use of the fixed phone by children for arranging meetings with peers (Büchner, 1990). A more recent French ethnography documents the equivalent usage among young adult friends (Manceron, 1997). Qualitative studies indicate this process continuing with the newer ICTs²⁴.

So we find, for example, e-mail being used in the longer term planning of meetings such as family re-unions or parties - with the advantage in comparison to voice telephony, or being able to broadcast details and even maps to several people at once.

4.1.1 Mobile phones and arranging meetings

While e-mail can be used for planning more short notice events such as meeting up after work, delays in the arrival of message and lost e-mails have been noted as a problem (Haddon, 2000b). It is in this respect that the instant reachability enabled by the mobile phone has an advantage²⁵. For example:

²⁴ For example, the five country study undertaken for NCR which was reported in Haddon (1998, 1999a), the six country study using focus groups organised for EURESCOM P-903 and reported in Klamer et al 2000, and British Telecom’s study reported in Haddon, 2000.

²⁵ A similar advantage is shared by the telephone - for example one Swedish study showed that e-mail use by the elderly was far more likely to be restricted to long distance messages, with the phone being used for such things as co-ordination of meetings (Östlund, 1999).

It's really useful to check up where people are on Saturday nights and they know they can get hold of me... (cited in Haddon, 2000b).

The same qualitative research noted above has captured instances of families co-ordinating their meetings, and hence mobility, as well as friends. And making similar comments about SMS messaging and youth, this 17-year-old interviewee noted:

'On Friday there are a lot more text messages than on Thursday because people are out and need to find out what is going on' (cited in Ling and Yttri, 2002).

Qualitative studies also show instances of using the mobile phone to confirm meetings (in order to avoid wasting time if there has been a change of plan) to help overcome problems of locating people one is supposed to meet up with in public spaces (i.e. phoning to ask where they are) and, frequently cited, to warn of delays or rescheduling.

One further phenomenon is when people use the mobile phone to make arrangements to meet when they have already arrived at a destination such as a pub, restaurant or other site – improvising a meeting rather than planning one in advance. One Norwegian study has noted this behaviour in particular among teenagers as well as the process of only vaguely specifying where to meet at first but then progressively firming this up through subsequent calls (Ling and Yttri, 2002).

Flexibility in making arrangements to meet

Many of these uses of the mobile phone imply the need for less planning in advance and suggest more spontaneity in organising meetings and travelling to them. Indeed the teens in the Norwegian study explicitly acknowledge this ability to organise meetings at the last moment and the specific pattern of teenage use has also been noted in French research (Licoppe and Heurtin, 2001). Indeed, one writer picks out such flexibility – applied also in other forms of life such as work organisation and transport - as a force that is changing the way of life in cities, making them operate in 'real-time' and *'reprogramming the rules of interaction for urban inhabitants'* (Townsend, 2001, p.72).

But how much have such principles of flexibility spread to a wider population such that a new 'just-in-time' form of socialising and organising is emerging?

Before making any such assumption, it is worth considering the point introduced earlier in this paper about the problems of synchronising time with others, including other family members, as people's individual time schedules become more varied (section 3). We have already noted that even young children have learnt to schedule in meetings in advance (section 3.1.1). The greater need for such planning was captured in one of the comments in a recent focus group study:

"When we were younger, we visited each other spontaneously. We don't do that any more. Now we call in beforehand and make appointments." (cited in Klammer et al 2000).

The point is that the greater possibility for instant communication does not necessarily lead us to meet more spontaneously if we are locked into fixed time commitments. Now clearly the Norwegian youth referred to earlier had a fair amount of free disposable time but a more general research question would be to ask:

1. *Under what circumstances, to what extent and for whom does a technology like the mobile phone enable different decisions about activities, about meetings and hence about mobility – which can mean, although maybe small, changes in routines and lifestyle?*
2. *And to what extent is the scope for such changes limited by the influence of non-technological considerations whereby people are constrained by time already committed through institutional limitations (hours of work, hours of study, shop opening hours), their priorities and their previous obligations?*

Less pressure to be punctual

One further perspective on this issue of the way in which the mobile phone allows people to reschedule is that the availability of this option can itself have a bearing on how much effort people make to adhere to the timetables negotiated with others. Arguably flexibility means that there is, for some, less pressure to be punctual (also noted by Townsend, 2001). But this in turn can have repercussions for relationships with others. As one focus group member noted:

“The mobile makes people lazy. It can help in unanticipated situations, but it mustn’t become a justification for always coming in late” (cited in Klammer et al 2000).

4.1.2 Mobile telephony and the logistics of everyday life

Finally mobile telephony (and SMS) not only helps people to organise meetings but it also facilitates the (re-)organisation of the other logistics of everyday life. In describing the elements of their concept of ‘micro co-ordination’, the authors of a Norwegian study include not only the calls to arrange for children to be picked up and dropped off, as was discussed earlier (section 3.1.1), but also mobile phone calls for such matters as contacting people when they are underway in order to arrange for them to take on some other activity, such as going to the shops (Ling and Yttri, 2002).

An exploratory quantitative study in Norway tried to follow up this qualitative analysis, exploring how much and in what ways mobile phones affected (certain types of) mobility (Ling and Haddon, forthcoming)²⁶. This study gives an idea of how much the mobile phone is influencing mobility – at least for certain types of

²⁶ Participants (parents from middle-class dual-income households) filled in diaries over a 24-hour period where they were asked to describe each private call they made and received via both mobiles and traditional fixed telephony. They were also asked to describe each car journey made during that period. The analysis showed that mobile phones led to far more changes in journeys than the fixed phone (31% of mobile calls led to a change as opposed to 15% of fixed line calls). In this study, 37% of mobile calls led to travel, while 31 saved a trip.

household and in relation to cars²⁷. There are also some suggestions for building on this in future quantitative and qualitative research, which includes taking the totality of people's telecommunications into account (fixed line, mobile, e-mail and other Internet communication) rather than just dealing with the mobile phone in isolation²⁸. A similar point is made in a French study which suggests expanding this to all patterns of communication, including letter-writing (Licoppe and Heurtin, 2001).

4.1.3 Information and mobility

So far we have considered interpersonal communication but there is also communication to obtain information that can have a bearing on patterns of mobility:

- For example, in the initial stages of planning a journey (e.g. checking routes, travel options) organising the relevant transactions (i.e. buying tickets) and checking relevant travel information at the last minute to see if there are problems (e.g. road traffic congestion, rail delays, flight delays).
- For some time it has been possible to monitor certain travel problems through the long established ICT of local radio – as regards traffic conditions, for instance.
- The initial planning of journeys and last minute checking for problems could also be facilitated by teletext information (at least in some countries such as the UK²⁹).
- More recently the Internet has provided another means for managing our travel.
- Then there are the 'newer' ICTs for organising mobility: the car radios which actively search for traffic information, the mobile phone services for cars supplying information on traffic conditions nearby, the computer software for route planning and the public transport touch screen information services.

Research on the use of travel data

Has this use of travel data and facilities been researched?

- The use of teletext has been studied by TV companies (e.g. Greenberg and Lin, 1988) although this appears mainly to be in terms of measuring which teletext pages are accessed.
- We might anticipate some research by the dot.com companies or Internet Services Providers as regards the use of the Internet for obtaining such information.
- As for the other, newer, services and facilities, although some have been around for a few years we would suspect there is not much research because usage is not so widespread – except, perhaps, for internal research by the companies concerned.

²⁷ The methodological issues are discussed in the paper, including the nature of the sample, possible interpretations of the question, issues concerning how respondents make decisions and the limits of focusing just on the car.

²⁸ For example, if someone makes a mobile phone call which changes travel behaviour, in the past an equivalent call may have been made using the fixed line. In which case, there might be no overall change in someone's mobility compared to the past. On the other hand, there might be occasions where mobile calls do not substitute for fixed line ones but complement them, constituting additional communications - which in turn might lead to 'real' increases, changes or reductions in people's travel behaviour

²⁹ It would appear that this is less developed in other countries such as France, including on the videotex system Minitel.

- Qualitative studies of ICTs and everyday life have show that to varying degrees people are accustomed to using teletext and more recently the Internet when planning travel (Haddon, 1999b; Klammer et al 2000).

Further research questions

But in relation to all of these ICTs there is the wider question or how much and for whom does such information affect travel behaviour?

1. *How much do people seek out such information, when does it make a difference to decision-making and with what implications?*
2. *Does it make the planning of travel more or less time-consuming, involve more or less effort, more or less stress, or lead to the development of more skills in planning?*
3. *And does it save time actually spent travelling?*

Finally, one backdrop to such questions is the issue of whether, for some people, travelling has itself become more problematic (e.g. due to more road congestion) or complex (e.g. due the many different offers as regards some rail or air travel) so that there are more possibilities and also more potential decisions to consider. *If so, would this make ICTs for travel management more useful and attractive than in the past?*

4.2 ICTs and Patterns of Travel

4.2.1 Telework and mobility

First it is worth noting that the whole issue of telework (and potential reductions in commuting) is relevant here because ICTs are usually associated with the new patterns of working at home³⁰. The first American discussions of telework in the 1970s actually used the term 'telecommuting' that reflected the interest in reducing travel because of the rise in oil prices. Since then telework has become of interest to a range of bodies for different purposes (e.g. personnel management) (Haddon, 1999a). Nevertheless, telework retains its implications for mobility, most frequently seen in discussions of car travel and environmental concerns (Gillespie et al, 1995).

One problem is that telework is difficult to measure because of different definitions of the phenomenon, its invisibility and, for many, its unofficial and casual nature (Haddon, 1999a). But it is nonetheless clear that if we count those who work mainly from home the number is relatively small, not the huge percentage of the workforce predicted by some pundits (Gillespie et al, 1995). Although there have been some efforts to predict the macro-effects of telework on travel patterns we are not aware of specific research on the actual movements of teleworkers.

³⁰ While the companies producing them might see ICTs as a driver of telework the picture is more complex since the option and decisions to telework are shaped more by the non-technological considerations of management, employees and the self-employed. But the emergence of new ICTs can be a facilitator of the move to telework and they are routinely used in the course of that work (Haddon and Silverstone, 1994).

4.2.2 Home shopping and mobility

Trends in home shopping or in conducting other commercial transactions from the home (e.g. banking) would also have implications for travelling and for spending time in public spaces. While there is a longer history of shopping by mail order and shopping or banking using the phone, the 1990s in particular saw an increase in the diversity of ICTs used for these purposes with the increase in TV shopping channels, the teleshopping services offered by mainstream retailers and the option of ordering and banking on-line, especially via the Internet.

The whole area of e-commerce has obviously been of interest to business and has been researched (e.g. Haddon, 1998a). While such research has not been directly interested in the implications for mobility we can speculate on how significant an effect e-commerce may have.

One wider concern is that all these remote transaction options might mean that people will become less mobile, become home-centred and lose a certain amount of social contact. However, there are a number of considerations to bear in mind.

- Even when people use services such as on-line shopping facilities some of them also combine this with elements of physical shopping: e.g. they may check prices on line and then buy from a shop, or go to a shop to see a good before buying at a cheaper price on-line. This in part reflects a preference that many people have for physically seeing a good before purchase, which is also the reason some people resist remote purchasing altogether.
- For some shoppers, in relation to some goods, we have to consider the pleasures of physically shopping.
- And people still like to get out of the house at times³¹.

On the other hand, qualitative research suggests that for some people, especially at busy times, the option of remote purchasing can be attractive and useful (Haddon, 1999b). In addition, routine purchases, purchases of some immaterial services and purchases where the physical nature of the good is less important (e.g. CDs) can be handled remotely with less concern. Meanwhile, telebanking is enjoying some success. So the picture is mixed.

We are not simply seeing the wholesale transformation of all commercial dealings and a substantial move to home-centredness but there are some parts of life for some of the population where new remote practices are being adopted. Clearly, evaluating all the impacts on mobility in everyday life would require a separate project but we might anticipate that at least one possible result of such a study would be that those impacts are limited rather than radical.

4.2.3 On-line communication with others

³¹ In fact, the new, second, peak-time shopping during the evening in the UK suggests that changes in the opening hours of shops may have had more impact on patterns of mobility than the option of shopping remotely.

Turning now to on-line contact with other people there is the question of whether this leads to more face-to-face contact. This issue could be considered as being primarily a social network question: How does personal contact relate to contact mediated by electronic means? As such the theme has been addressed in telecom firms (Smoreda and Licoppe, 1999; Ling, 2000; Haddon, 2000b), although the key interest has not necessarily been in the implications for mobility.

Research on e-mail

- Some qualitative research suggests that most on-line contact in terms of e-mail is with people already known (Haddon, 1999b).
- There are examples where e-mail contact can lead to more personal contact than would otherwise have been the case: especially in terms of reinforcing contact with distant friends in other countries, or penfriends.
- E-mail can lead to more communication than the more infrequent contact by letter had previously allowed and this extra degree of contact can in turn sometimes lead to more interest in meeting up.
- But the impression from that research was that e-mail itself did not make a huge difference to the frequency of meeting friends.

Research on chatlines

Although chatlines and other virtual places where it was possible collectively to meet others appears to be a minority interest, there were some examples where it led first to e-mail on a one-to-one basis and then to meeting in person at some stage (Haddon, 2000b). But again, the impression is that this was not widespread and when it does happen it hardly produces major change in mobility patterns.

4.2.4 Mobile phones and new mobility

As regards the mobile phone, in qualitative studies we again find instances when people are out of the home and they use the mobile phone to ask someone else to join them, perhaps leading to a journey which otherwise might not have taken place. *But like the case of e-mail above, there is a question as to whether this has a relatively minor impact on mobility. This would need more detailed analysis than the rather anecdotal examples noted in passing during interviews or group discussions.*

Further questions

We noted in the previous section that technologies such as the mobile phone could influence the organising of meetings and hence of mobility (section 4.1). But the question remains: how much does this in itself then lead to changes in people's pattern of movements?

- *In other words, can that flexibility influence the activities we take on, the way we link activities and hence the patterns of movement between activities?*

We saw earlier the example of phoning to redirect someone to the shops or to undertake other errands when travelling, for example, between work and home (section 4.1) (Ling and Yttri, 2002). But more generally:

- *Does the option provided by mobile telephony enable us, indeed tempt us, to pack in more activities into the day?*

In one sense, this relates to the wider issue of time use, the timing of activities and the ‘busyness’ of life. This all has implications for mobility. *Such issues really require more systematic investigation to see if ICTs such as the mobile phone make much of a difference, in what circumstances and for whom.*

Awareness of options

Finally, there is the question of whether simply awareness that the mobile phone provides new options tempts us to behave differently. Perhaps the clearest example would be when people venture into places that they normally would not consider going to precisely because they know that if there is a problem they can always seek assistance by phone.

There are cases reported in the press of people going into more dangerous or isolated areas, but we might consider more generally if people take more risks about where they go, even in urban locations. *Once again, this issue does not appear to have been systematically researched.*

4.3 ICTs’ Influence upon Travel and Spending Time Abroad

4.3.1 Familiar interfaces

We have already noted that ICTs can be involved in the organising of travel in general and international travel particular (section 4.1). But there are other ways in which ICTs can have a bearing upon the experience of travelling and spending time abroad. For example:

- Credit cards increasingly allow people abroad to draw money from ATMs (banking machines) without having to deal with banks or bureaux de change when they need to change money.
- The growth of mobile phones means that there is no need to use, and find out how to use, the telephones of the country one is visiting.

Both these examples illustrate the point that one is using a familiar interface, there is less need to know the language of the country and less need to know the particularities of how things work there – i.e. to know the social system.

- Kiosks which provide tourist information, especially when there are multi-language options, are another example of just such an increasingly familiar interface.
- The availability of local information on the Internet and now via mobile phone services also provides new means for those abroad to find out about their surroundings.

Certainly as human-interfaces all of these are researched and evaluated (for example, in terms of ergonomics and user-friendliness) but it remains to be seen whether there are studies of how these ICT options influence both decision-making and the more general experience of being abroad.

4.3.2 Being ‘away’ from home

One other perspective on time spent abroad, be that on holiday, for business purposes or as part of a longer visit (e.g. for study purposes) is that it traditionally meant being ‘away’ from home and from the ties of home, from the daily interactions, commitments and routines associated with being home-based. But ICTs make it increasingly easier to maintain those links, to be in contact (also to know what is going on back home) and to be reachable. Consider the access to ‘foreign’ TV abroad (for some languages such as English), the mobile phone and the Internet cafés or mobile devices for picking up and sending e-mail.

In some respects this has enabled those who travel or spend a longer time abroad to feel in touch and perhaps have some peace of mind about being reachable if needed. These ICTs facilitates their ability to continue to manage their lives and relationships with others when they are away. *But the other side of the coin is that it means that such travel is less likely to provide the degree of break from the home base and normal routines that it once did³². This phenomenon might deserve further attention.*

4.4 ICTs and the Use of Travel Time

Portable ICTs in particular have the potential to change how we can make use of the time spent travelling. How this time might be spent in terms of entertainment is tackled in the next section but here the focus is on using travel time to achieve things and using it to communicate – the two not being mutually exclusive.

Research on portable ICTs

While the mobile phone can be used by all travellers³³, with certain forms of travel such as rail or air where travellers are passengers, we can also consider their use of ICTs such as laptops, palmtops and organisers. Although we are starting to find research on the details of how these ICTs are used for business purposes (O’Hara et al 2000) there is less on their social use.

Mobile phones and travel time

³² Perhaps this is most dramatically demonstrated in the case of students living abroad where e-mail especially has meant that they are kept constantly informed about what is going on back home, lessening the extent to which they are truly away from home.

³³ If one ignores the issues surrounding using a mobile phone while driving.

Meanwhile, qualitative research indicates that some people find it to be quite useful to be able to utilise mobile phones to exploit travel time, for example to fit in calls which it is more difficult to make at other times. And for some people travel time is not only 'dead' time but it is also perceived as being boring time and so they welcome the chance to be able to do more with it, either by voice telephony or sending SMS messages (Klamer et al, 2000).

Travel time as personal time

However, we should consider more carefully what activities or experiences the use of such ICTs potentially displaces. For example

- One study by the French Ministry of Transport showed that for some people the time spent commuting was their only free time to reflect and they were concerned to keep this time. As transport became faster they preferred to commute further but retain the same amount of travel time³⁴.
- In a more recent European study, some participants also noted that travel time was a time for reading books, newspapers, planning daily activities or just listening to a Walkman (Klamer et al, 2000). Commuting could also be useful for allowing a mental transition between home and work or for simply relaxing.

Hence people did not necessarily want to fill up that time with other ICT-related activities or by communicating. The implication is that while it is possible to note what people do with their mobile ICTs when underway and why, we also need to appreciate why and when they resist using them.

Mobile phones and the management of affairs when away from the home base

If we return to the question of what mobile phones in particular are used for when people are way from the home, one of the earlier academic papers on this topic had discussed 'remote mothering' (Rakow, and Navaro, 1993). This involved women carrying the mobile phone to be available to children when needed, to be able to continue 'mothering work' even when they were not physically present.

But more generally, mobile phones (and by extension e-mail) clearly allow the management of affairs when away from the home base, as was picked up in British Telecom's recent research where a wife who was out shopping continued to be involved in negotiations with her husband about what the visiting builders should do with their kitchen (Haddon, 2000b). Indeed, as noted in the case of youth (section 3.3), it can allow one to organise ones' affairs when one does not necessarily want to do so at home – in this case to 'organise' one's social life beyond the reach of parents' (Ling, 1998).

Appropriate communication by mobile phone

However, in researching the use of the work phone for private purposes one French study noted how only certain types of communication were felt to be appropriate in

³⁴ Obviously this decision is not only based on the desire for this personal time but on such things as the options to acquire cheaper or larger accommodation further from the city or to live more in the countryside.

the work context – i.e. there were some subjects that would not be discussed in such phone calls (de Gournay, 1997). *So the equivalent question here is what type of things would be dealt with by mobile phones and what would not?* Perhaps this would vary with the specific context in which the mobile is being used.

Gifting calls as symbolic communication

Finally, to stress ‘managing’ or ‘achieving’ things with mobile ICTs is answering the question of what we do with these technologies in very instrumental terms. Another perspective would be to consider symbolic issues – e.g. the ‘gifting calls’, where it is the act of calling that matters as much as the content.

Here we should reconsider the calls that check to see that everything is OK at home or inform, especially family members, of arrival times. While they can assist logistics, enable the passing on of information and help others to make decisions about time use, they might also be considered as gestures (Haddon, 2000b).

- In another analysis, phoning home to ‘check-in’ has been seen as ‘managing an ideological place in the home’ as a good partner (Nafus and Tracey, 2002).
- Equally communications to friends when out of the home can be considered in terms of maintaining a place, or indeed a particular identity, within social networks.
- And making such calls need not just be seen as representing oneself to others but also as constructing an identity for oneself – for example, as someone who is ‘not wasting their time’ when they are mobile (Nafus and Tracey, 2002).

4.5 ICTs and Being in Public Spaces

4.5.1 Mobile phones and freedom from being tied to the home

One consequence of the availability of mobile phones which has been picked up in both European and US studies was that being reachable on the mobile phone when away from home (or being reachable more quickly by the voice mail facility on mobile phones) meant that people did not have to stay at home to wait for messages (Klamer et al, 2001; Palen et al, 2001; Gant and Kiesler, 2001). In other words, the mobile phone helped to overcome constraints that had previously, at least at certain times, encouraged people to be less mobile by tying them to the home.

“I’m much more mobile now than I used to be. I used to stay at home when I expected a call. Now I leave home when I want to. My friends can leave a message or call me at my mobile number if I’m at the campground” (cited in Klamer et al, 2000).

And a similar point was made about not being tied to the workplace.

(F39) “Now I can enjoy my free time with my daughter in the park, because I am permanently connected with the office so that, if there is an urgent need, I can be located. Before I had to be (at the office for) the whole working day, now I do not need to be” (cited in Klamer et al, 2000).

Once again, while these and other such instances indicate an increased flexibility the question remains as to how significant a change this is – for example, who does it affect and under what circumstances?

4.5.2 Mobile phones and co-present others

Apart from this interaction with distant others when in public, there is also the question of how mobile ICTs become involved in our interactions with those immediately present in those spaces.

First we have a range of analysis of how ICTs like the mobile phone are utilised or are taken to symbolise something about the user to others who are co-present (Haddon, 1997a, Haddon, 1998e). This has been noted in particular in relation to the display of mobile phone by youth (Ling and Yttri, 2002).

Second, there is some analysis of the use of ICTs in public spaces to cope with what has been described as the ‘inflicted co-presence’ of other people by creating our own private spaces in public to avoid the gaze of others and to avoid interaction with them (Cooper, 2000). Mobile ICTs such as the Walkman (Bull, 2001), the laptop or palmtop, handheld games and now SMS can all serve to cut us off from those immediately around us. Indeed, using a mobile telephone can also be used to convey a message to others concerning the user’s non-availability to those who are physically present (Cooper, 2000).

Third, there have been studies of ‘cooperation’ between mobile users and co-present others. For example, one Norwegian study shows how those co-present cope with the mobile call, including such behaviour as discreetly turning away to provide the caller with a ‘space’ to conduct the call (Ling, 2002). Meanwhile a Swedish study has focused on the sharing of mobile phones in public spaces, especially, but not solely, amongst friends (Weilenmann and Larsson, 2001).

Lastly, there is quantitative data on other people’s reaction to the mobile being used in public spaces. This was explored more generally in the pan-European studies (Haddon, 1998c, Mante-Meijer and Haddon, 2001), while a Hong Kong study ranked specific locations where people complained more or less about mobile phone use (Wei and Leung, 1999). Then there are qualitative studies that have focused on how those present try to influence the behaviour of mobile users, for example, by showing their negative reactions in various ways (Ling, 1997).

4.6 ICTs and the Subjective Experience of Mobility

When discussing the effects of changing institutional times on mobility, Salomon and Tacken note:

‘Behavioural responses to the offering of flexible work time or opening hours may not result in changes in the temporal distribution of trips, but in reducing anxiety aroused by time-space pressure of urban dwellers’

(Salomon and Tacken, 1993, p.63).

The equivalent point could be raised about ICTs: when do they affect not so much actual mobility patterns as perceptions and how that mobility is experienced?

Mobile phones and a sense of safety

One of the clearest examples cited for some time in various research is the greater sense of safety provided by mobile phones, often mentioned in relation to driving, and which is perhaps more acute for some groups than others – e.g. the Swedish Handicapped Research Centre found that disabled people feel safer with mobile phones when driving alone. In an early survey women certainly indicated that they felt safer when driving because of the mobile (Rakow and Navaro, 1993)³⁵.

In fact, although people quite often mentioned the car breaking down, recent qualitative research suggests that what people anticipate as an ‘emergency’ varies and having the mobile available can provide a general sense of security and assurance, a peace of mind knowing one has more options to respond (Klamer et al, 2000). The same point could be made not only for actual travelling, but for being especially in isolated places, such as the Norwegian Hytte, a second home often in remote places ‘near to nature’ (Ling et al, 1997).

Portable ICTs, comforts and pleasures

On the other hand, we have a very different type of subjective experience of mobility in terms of comforts and pleasures. Entertainment-related ICTs in particular would be relevant here, if one considers the rise of in-car entertainment, for example. We do not know of research on how this is experienced but there is a little more material on one other portable ICT, the Walkman (Bull, 2001). This study analyses empirical material to explore the various ways in which personal stereo use can be used to ‘*re-spatialize experience*’ – for example when people use ‘*familiar soundscapes to accompany them on urban journeys*’ such that they have a sense of ‘*never leaving home*’ and they can ‘*ignore the environment traversed*’.

5. Issues: ICTs and mobility

5.1 Disturbance in and Withdrawal from Socially Constructed Spaces

So far we have explored both how the experiences of being in public spaces can have implications for ICT use (section 3.3) and how the availability of ICTs can have a bearing upon our experience of public spaces and our relationships with co-present others (section 4.5). Although it is inappropriate in this paper to discuss in much

³⁵ In a slightly different sense, Bull discusses how personal stereo users can have a sense of being more ‘secure’ in terms of feeling at home and at ease in public spaces because of the sense of familiarity which the music brings (Bull, 2001).

detail the history of analyses of (urban) social spaces it is worthwhile standing back for a moment from the interest in ICTs to consider the nature of public spaces.

Public and private spaces

‘Public’ and ‘private’ are constructed notions that refer to different things in different contexts (e.g. as in discussions and critiques of ideas about the public world of work and the private world of the domestic sphere). In this paper the focus is on expectations and behaviour in different physical settings.

Understandings about the degree to which physical (and always social) spaces are deemed to be relatively more public or private – and expectations about appropriate behaviour in such spaces – are subject to on-going negotiation³⁶.

- There may well be some institutional definitions of the status of certain spaces and of (in)appropriate behaviour in them and even regulation of those spaces (e.g. no smoking, no begging, no playing music instruments, no using a mobile phone during performances).
- Yet people still have to work to make those definitions stick, to make that governance of space a reality³⁷.
- Moreover, those definitions and that regulation are sometimes resisted.
- Or else new situations emerge, such as the arrival of new ICTs, which pose afresh questions of appropriate behaviour and of the nature of different types of space.

Reacting to ‘inappropriate’ behaviour in public space

If we consider one of the first portable entertainment ICTs – the Walkman – there was early negative reaction to its use in public space by those co-present as well as by some social commentators. Analysts trying to make sense of this reaction, drawing on anthropology of Mary Douglas, argued that this private listening in public spaces was ‘*out of place*’ and thus transgressed boundaries (du Gay et al, 1997). The authors of this study noted that with the proliferation of the technology this negative reaction to the Walkman diminished somewhat over time but similar reactions, partly for similar reasons, were later directed at the mobile phone³⁸.

In an analysis of complaints about mobile use, one Hong Kong study also notes a range of other ICTs that can in particular social locations and situations be deemed intrusive, including the beeping of a digital watch, the ringing of a pager and clicking on the keyboard of a laptop (Wei and Leung, 1999). Over and above the reactions of

³⁶ Although the interest in this paper is in relatively public spaces, the on-going work of creating relatively public and private spaces in the home for the purposes of taking different types of telephone call on the fixed line is noted in Lohan, 1997.

³⁷ In a domestic context the equivalent might be the ‘house rules’ and Lohan notes how they have to be constructed over time and with effort (Lohan, 1997).

³⁸ In the 1996 European survey, in Italy, the UK and Germany over half of those surveyed had some form of negative reaction to other people’s use of the mobile phone in public. The percentage was slightly smaller in France and Spain where the spread of mobiles was less at the time (Haddon, 1998c). The 1999 6-country study using focus groups suggested that three years later there was still a substantial amount of negative reaction (Klamer et al, 2000)

those immediately co-present, there have been questions about whether and how such behaviour, using the metaphor and precedent of ‘polluting the environment’, could and should be the subject of more formal regulation, including public policy (Haddon, 1997b; Wei. and Leung, 1999).

‘Communicative’ behaviour in public spaces.

We have already noted studies of specific spaces (restaurants, the Norwegian Hytte) where an attempt has been made to delineate the more detailed meanings of particular social spaces, beyond blanket notions of public and private (section 3.3). But there have also been some wide-ranging analyses specifically of people’s more general expectations of ‘communicative’ behaviour in public spaces.

For example, one argument has been that any code of conduct that had emerged in relation to the fixed telephone was now disappearing through the ‘chaotic and divergent’ use of the mobile phone such that at the moment there was no code (de Gournay, 2002). Meanwhile, another line of argument has drawn attention to the perceived anti-socialness of mobile users’ withdrawal from the immediate physical social space and those co-present through a preference to interact with distant others (Fortunati, 1997).

The disturbance of mobile calls

From the perspective of the ICT user, we saw earlier how various studies pointed to portable ICTs enabling just such a strategy of withdrawal from the immediate social context (e.g. using the Walkman to shut out the world or the mobile phone to signal our disinclination for interaction with co-present others) (section 4.5). But we also saw how incoming mobile calls can be equally disturbing for mobile phone users, leading to various tactics aimed at controlling or managing such communication (section 3.3).

One additional observation emerging from this is that although the topic under examination here is ‘space’ we really need to be attentive to time-space, to the ‘situation’, to the ‘moment’ and to the activity that is taking place. For example, it is not just the fact of being in restaurants that may have a bearing on how we feel about and handle communication but the act of going out for a meal with someone, reserving a time as well as a space for them, or for family, with all the expectations and desires that this may imply.

5.2 Surveillance and Privacy

More generally there have been for some time concerns about the potential for surveillance afforded by ICTs through the databanks which they enable and through the audit trails which electronic transactions leave behind them. Of interest in this paper is the potential for monitoring people’s movements, which is easily demonstrated by the way police investigations can track where credit cards or bank cards are used. In the commercial field, GPS is already used to monitor the transport of lorry cargos and we have the prospect of GPRS being built into mobile phones.

But even existing mobile phones can serve to make the movements of users known to others. Admittedly, researchers have noted the 'spatial indeterminacy' of mobile phone and indeed users sometimes withhold or supply false information about their location (Licoppe and Heurtin, 2002). But those same authors point out how mobile users often supply clues about their location as part of managing the telephone interaction and generating trust between interlocutors.

Parental surveillance of children

One particular issue is parental surveillance of children. While younger people were more likely to use mobile phones because they offered more privacy than the fixed line, even mobiles are double-edged in this respect and the mobile phone as '*umbilical cord*' from parents to children can equally well be perceived as the '*digital leash*' when children are out of the home³⁹ (Ling, 1997).

While pertinent to this discussion of mobility, at another level this surveillance potential clearly relates to the whole nature of parent-child relationships and issues of children's independence (Nafus and Tracey, 2002). Of relevance here is that the surveillance issues can be relevant to how children feel about the technology and how they handle not only communication when away from the home base but intra-familial rules and understandings about that communication.

5.3 Sustainable Mobility

Changing tack somewhat, one agenda through which mobility and ICTs can be addressed is the environmental perspective, here thinking mainly of transport issues (again especially in relation to the pollution from cars). There has been some green critique pointing to the unsustainability of current levels of mobility, or what has been termed 'hypermobility' (Adams, 2000)⁴⁰.

This environmental interest directs attention to the future of mobility and the roles which ICTs might (or do) play. We noted earlier speculation about telework (and by implication the ICTs involved in that work) reducing the need for work-related travel (section 4.2). But in practice we have seen in this paper how ICTs can have a variety of effects on travel behaviour.

Suffice it to say that questions of sustainability provide yet another framework for evaluating the relations between technology and mobility in everyday life. But then we might need to consider further questions about:

- The extent to which there is (or could be) an environmental consciousness which changes people's voluntary behaviour

³⁹ Based on French studies, de Gournay notes that 'most cell phones owned by young people were given them by their parents in the hope of controlling them at all times, even in places hitherto inaccessible - school, street, while travelling' (de Gournay, forthcoming).

⁴⁰ Green concerns are not the only considerations which may provide limits to everyday mobility - e.g. there may also be limits because of the time people are willing to spend on travelling (Vilhelmson, 1999).

- The extent to which state or local government (or EC) decisions can change behaviour
- Whether and how this might reduce or change the mode of mobility
- And the role of and consequences for ICTs in this process.

5.4 Mobility and Modernity

Lastly, as in the case of urban social spaces there is a substantial literature on the nature of modernity which is too wide-ranging to address here, but which is from time to time referred to in some of the literature on ICTs (e.g. Licoppe and Heurtin, 2002; de Gournay, 2002). While discussions of the contemporary experience of space-time provide one potential framework for thinking about ICTs, one author specifically addresses the relationship between modernity and mobility⁴¹.

Sørensen (1999) notes that although there is a considerable literature on the modernity and the car, there is little on mobility in general. The dynamics of the demand for mobility is an under-researched topic in the social sciences. In particular he asks *'how come the present level of mobility is so seldom problematised, so often taken for granted'* (p.12).

According to Sørensen, and we would agree, answering this question requires more than an instrumental analysis of rational economic decision making. It requires an appreciation of the symbolic meaning of mobility. To understand why transport has gained such economic and cultural importance in society it is important to consider a range of influences.

- These include the processes by which we have become locked into high levels of mobility by the emergent urban form.
- It includes the place of mobility within political programmes of modernisation.
- And we need also to consider the depiction of mobility in the cultural industries.

Modern societies have been built to crave mobility and what we now have is a culturally produced pattern of mobility⁴². Referring to Berman, Sørensen argues that the experience of modernity is about movement. Mobility is a very basic constituent of the modern. Moreover, mobility is in tune with the ideology of individualism, the extended space of everyday life and individual freedoms to move around it. Arguably, mobility has been turned into a political right⁴³.

Sørensen does himself consider what part ICTs might play in the future of mobility, citing examples such as road transport informatics and virtual social practices⁴⁴. In

⁴¹ This theme of the paper was developed specifically in a presentation within the workgroup from Maria Lohan.

⁴² Here Sørensen does draw attention to authors who note societal differences: e.g. the Europeans appear less enraptured by the very process of motion compared to the Americans.

⁴³ In practical terms this was illustrated by the example from one of the workgroup discussions where the Flemish government in Belgium was currently discussing what minimum degree of personal mobility should be guaranteed by the state - e.g. by providing free public transport for under 12 year olds and the over 60s.

⁴⁴ More specifically, Sørensen notes that the characteristics of mobility - especially automobility - include notions of flexibility, individuality and speed. In the workgroup discussions of his work we

certain ways ICTs have the potential to shape how mobility is practised. But there are questions about the extent to which ICTs can ever make much impact on the mobility levels.

The point Sørensen raises is that this inertia arises not only because of the extent to which we are dependent on patterns of high mobility by the spatial location of home, work and other facilities but also because of the mobility patterns to which we have become accustomed and which we desire. For example, how much will people accept electronically mediated contact with others when so high a social value is placed on face-to-face relationships (which entail some mobility). Then we have people's commitment of 'mobility praxes', such as those related to leisure and shopping.

We leave the last word with Sørensen who asks '*can we envision a return to a more locally embedded form of life without regaining pre-modern boundedness?*' (p.19).

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noted that this is perhaps another reason why the mobile phone has been so successful - because (symbolically) it has some of these same qualities. In fact, the parallels with the car were even noted in the focus group discussions of the recent international survey (Klammer et al, 2000).

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