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Mobile phones and the inexorable advance of multimodal connectedness

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Abstract

The aim of this article is to put mobile phones and uses of other new media into the broader context of cross-cultural comparison. The article focuses on two countries (Sweden and the USA) and on leisure and sociability. A problem with studies narrowly focusing on mobile phones is that the mobile's uses cannot easily be separated from uses of other information and communication technologies (ICTs), as when ICTs compete for time spent or when key functions such as maintaining relationships are distributed across devices. Therefore the concept of multimodal connectedness is introduced to examine the whole range of ICTs. Once we can see how various technologies for maintaining relationships complement each other, we often find that convergences outweigh divergences between cultures. The implications for cross-cultural comparison are that we can distinguish between culture in an anthropological sense (that is, as a unique way of life) as against mediated culture, where there are increasingly common patterns of multimodally communicative relationships across cultures, even if differences also persist.

Key words

cross-cultural comparison, everyday life, internet, mobile phones, Sweden, USA

Framing the question

One difficulty of doing cross-cultural comparative analysis is the 'unit of analysis' problem: should nations, generations of users, more specific user groups, or uses of different devices provide the appropriate units for comparison? This problem could be overcome by anchoring the analysis in a holistic account of historical changes across the whole range of information and communication technologies (ICTs) for different types of activities in everyday life, which would provide very concrete and observable units of analysis. However, data about such observable individual uses must still be aggregated into larger patterns that can

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be compared, typically among countries (or regions consisting of similar countries), since these provide the most common units in cross-cultural comparisons (Hallin and Mancini, 2004; Livingstone, 2003).[1]

One reason for focusing on concrete everyday uses of mobile phones (including the use of the internet on mobiles) is the widespread view that these devices facilitate access to anyone, anywhere, anytime, which implies that the technology causes wholesale social change. But this view overlooks a number of limits, including the number of people with whom we typically maintain relationships and the time spent using ICTs. However, if it is dangerous to make generalizations about wholesale changes, the danger at the opposite extreme is to say that everything depends on context, or that it is impossible to make cross-cultural generalizations about the social implications of technology.

Mobile communication cannot be tackled in isolation. On the one hand, mobile phones are devices for more than interpersonal communication on the go, for example when they are used to access online news. On the other, the functionality of mobile phones overlaps with uses of other devices, including, for example, landline phones, music players, and internet information-seeking and emailing on PCs. (Compare this situation with old media – television, radio, telephone – which were essentially single-purpose devices.)[2] This problem is likely to become ever more urgent, as new devices come onstream with various modalities for constant awareness of others, like Twitter, blogs (including videoblogging on YouTube) or GoogleLatitude (which enables people to track their friends' location via mobiles or PCs). This problem of devices with several uses is perhaps just as difficult in cross-cultural comparison of ICTs as finding appropriate countries to compare.

A further noteworthy feature of cross-cultural comparisons is that they are often aimed at finding differences. Compared with differences, discussions of convergence – or a homogenization of cultures – are rare (but see Rantanen, 2005; Schroeder, 2007), even if there are no a priori reasons why one conclusion should be more likely than the other. There are, of course, many discussions of convergence with respect to technology and standards (Baldwin et al., 1996), and service provision (for a historical perspective, see Briggs and Burke, 2002: 267–319), but not concerning cross-cultural consumption or everyday uses of ICTs. In any event, cross-cultural comparisons of ICT uses must be aimed at researching differences and/or similarities in patterns of everyday life.

Fortunately, there are a growing number of studies of the uses of mobile phones (Katz, 2008a) and sources of data (ITU, 2009). As for ICTs and social change in general, there are not only vast amounts of data but a body of research so large that it almost cannot be overviewed in a rapidly changing landscape of new media. Yet even if new media are in a state of constant flux, it must be possible to pinpoint the most significant changes brought about by mobile phones among the uses of ICTs generally and fit them into broader patterns of social development. Further, it must be possible to relate the large body of data and findings that cover the range of levels (from macro-social changes to everyday life) and devices. In other words, there should be a coherent theoretical frame such that we have a better understanding of how ICTs contribute to differences and homogenization in a wider global cross-cultural perspective.

Some delimitation of the scope in cross-cultural comparison is, of course, necessary. In keeping with the other contributions in this special themed section, the focus is on mobile phones and narrowed to changes in everyday life in the sphere of consumption or leisure

and sociability, that is, apart from working life, and from political information and communication.[3] Such delimitation to a sphere of consumption or culture (as distinct from the political and economic sphere) has been argued for elsewhere (Schroeder, 2007), but it is also warranted by the nature of uses of ICTs themselves: peoples' uses of ICTs for leisure are different from their (economic) work uses. For example, if we think about sociable connectedness for leisure compared with work (including unpaid work), there are quite different constraining and enabling forces: coordinating care for children or with others in a work organization means that much of the volume of one's communication is a requirement of the job that one cannot opt out of, unlike the comparatively untrammelled and optional nature of leisure communication. The same divergence applies to political uses of ICTs, where communication between those who govern and those governed faces different constraints and possibilities from those that hold the fabric of everyday relations together. (Consider the spike in the importance of political communication during brief election periods, compared with the steady stream and regular rhythms of everyday leisure communication.)

This article offers a series of linked arguments that together provide a framework for cross-cultural comparisons of mobile phones and other ICTs used for sociability. The first is that cross-cultural analysis of mobile telephony requires a long-term perspective which provides a backdrop of the range of ICT uses. The second is that mobile phones can be regarded as part of a package of a larger communication and information diet of multimodal connectedness. The third, building on the first two, is that this background of a common multimodal connectedness is useful for identifying cultural differences among its different types. Hence, we must examine more closely the nature of multimodal connectedness and of technologically mediated sociability, and how both are embedded in everyday life. At the same time, it is important to go beyond everyday life to recognize that mobile phones, and the mediated relationships they entail, are rapidly spreading across the globe. Equally, we must not prejudge the nature and value of mediated as against other relationships. Finally, even if multimodal connectedness is still increasing, we can discern limits on the time spent in mediated engagement with others, and with information and entertainment. Let us take each of these arguments in turn, and begin building the case by focusing on Sweden and the USA for cultural comparison.

Sweden, the USA and beyond in comparative historical perspective

To put findings about uses of mobile communication and other ICTs into a broader context, it is necessary to adopt a comparative historical perspective. Sweden and the USA provide particularly useful cases for comparison of ICT uses: both have highly developed economies and democratic governments, and both are consumer societies in which ICTs play a major role in consumption (Schroeder, 2007). Yet the two have distinct cultures.[4] Consider, for example, their notions of the self and its place in the environment. Orfali (1991: 443) says of Sweden that 'the dream of every Swede is essentially an individualistic one, expressed through the appreciation of the primitive solitude of the vast reaches of unspoilt nature'. Yet this individualism must be located in the larger context of a communitarian society: 'In Sweden, perhaps more than anywhere else, the

private is exposed to public scrutiny. The communitarian, social democratic ethos involves an obsession with achieving total transparency in all social relations and aspects of social life (Orfali 1991: 418; see also Frykman and Löfgren, 1987).

Compare this notion with individualism in the USA, where 'the pervasive pragmatic modular approach to life permits Americans to ... [visualize] the world around them as a machine that can be retooled, or taken apart and rebuilt, in order to achieve maximum efficiency ... even the self is considered to be a kind of modular entity, capable of being reconfigured to fit into preferred life styles' (Hall and Lindholm, 1999: 86). Here the larger context is a society that prizes self-improvement and where 'each striving individual seeks to become "all you can be" through ceaseless labor, accumulation, consumption, and display' (Hall and Lindholm, 1999: 90. For a discussion of these themes in relation to technology and consumption, see Nye, 1998: 182.)

Against the backdrop of such different cultures, what about ICT uses? If we examine telephones and television in Sweden and the USA since their beginnings, we find a long-term trend common to both countries of 'more': more time is being spent, and a greater number of contacts is being maintained, via more multiplex channels (Schroeder, 2007).[5] For example, in both countries, the amount of time watching television has increased (perhaps plateauing in recent years), as has the amount of time telephoning others, consuming a sizable proportion of leisure hours. At the same time, devices (and ways of using them) have proliferated: households typically have more than two television sets, with a growing range of offerings, and the internet and mobile phones have augmented and complemented uses of landline phones. In both countries, there is increased use of ICTs and hence a more uniformly diversified mediation of interpersonal relations in leisure and consumption.

One factor limiting use of these devices, particularly for leisure, is the total amount of time available. A substitution effect takes place, as when use of the internet eats into time spent watching television rather than adding to it (World Internet Project (WIP), 2009: 319). Similarly, the number and frequency of social contacts cannot be expanded indefinitely, and so ties may be maintained by shifting from one channel (voice) to another (text), by using one-to-many modalities (such as chat rooms or social networking sites) or by multitasking (WIP, 2009: 322). Still, we need to see how mobiles and other new ICTs either add to or shift use of ICTs that existed before the newer media came along against this baseline of how ICT uses had increased and proliferated up to this point.

Mobile communication and other ICTs: substitutes, complements, extensions and limits

To what extent is mobile telephony displacing, extending or complementing traditional telephony? In Sweden and the USA, as elsewhere, mobile phones are beginning to displace landlines. By 2008, 14.5 percent of adults in the USA (and 30.6% among 18–24-year-olds) had no landline phone (Keeter, 2008.) In Sweden, the number of households with no landline phones has risen from 3 percent to 6 percent between 2003 and 2007. However, that number is 37 percent (in 2007) for households where all are under age 26 (Post och Telestyrelsen, 2007: 9); perhaps a sign of things to come.

To understand how mobile telephony is changing patterns of communication, we need to examine the whole range of ICTs that people use in mediated relations with others.

Mobile phones have various consequences, such as enhancing small-group solidarity (Ling, 2008: 186) through the exchange of messages and by fostering a ritual sense of connectedness. We also know that mobile phone use is often squeezed into dead time such as travel (Haddon, 2004). As we shall see, various other notions (such as 'always on', 'connected presence' and 'co-presence') have been used to describe these consequences, but they capture only some aspects of mediated relations. Multimodal connectedness, however, which can be defined as the various modalities through which people maintain their connections with each other in everyday life, provides a means of grappling with the proliferation of ICTs.[6]

Consider young people's use of ICTs for communication. Thulin and Vilhelmson (2009), among others, have argued that an 'always on' connectedness is emerging among Swedish teenagers, which intensifies mediated interpersonal networks. While 'always on' connectedness in Sweden includes the internet, Swedish teenagers have, at least until recently, been less likely to use computer-based instant messaging (IM) and more likely to use mobile texting than, for example, US teenagers. However, both IM and texting are often used interchangeably for frequent short communicative exchanges within small groups of friends who also see each other frequently offline (Boneva et al., 2006).

Sweden is similar in this respect to some countries, especially in Asia, which are far more centred on mobile phones than on computer-based communication (Shristava, 2008: 19–22; Myata et al., 2008). Intensive use of Japanese mobiles, for example, has been described as creating an 'ambient virtual co-presence' (Ito and Okabe, 2005), especially with frequent text exchanges. (Japanese *keitai* mail is roughly equivalent to what the rest of the world calls text messaging or SMS, though Japanese messages are not limited in length and are physically sent as packets of information, like traditional email.) Licoppe (2004), who studied French uses of mobiles, has similarly spoken of 'connected presence', which can be seen as equivalent to computer-based internet 'always on' networks. (At the time of Licoppe's study, the French rarely used mobiles for sending email.)

'Always on' connectedness can also appear on social networking sites (SNSs), which are typically used on computers in both Sweden and the USA (though recent devices such as iPhones, which offer easy internet access, blur this distinction). By contrast, in Korea, where such sites are extremely popular, they are often used on mobiles (Haddon and Kim, 2007). The dominant Korean SNS, Cyworld, has been available for mobiles since 2004. Kang (2008: 420) estimates that 'perhaps 90% of South Koreans in their twenties are registered Cyworld users'. Its most popular service, Minihompy (mini homepages) allows users to exchange photos, exchange gift tokens ('acorns') and leave messages on each other's pages. This kind of communication is obviously different from a voice call or text via mobiles, but it can also be seen as a form of multimodal connectedness. Users complain that they feel 'low' if they have not been left messages, though they also indicate they can communicate feelings in ways that would be more difficult face to face (Kang, 2008: 426). While generating this kind of connectedness requires effort (and it is sometimes perceived as burdensome), it provides a means of including friends in your everyday life, generating an ongoing mobile community (Kang, 2008: 428–9).

It is by now clear that some forms of multimodal connectedness overlap, even though they occur on different devices and a kind of attention economy between them emerges. Moreover, as people in countries such as Japan increase their use of computers, and as

mobile phones in many countries are increasingly used to access the internet, it becomes progressively more difficult to separate mobile phone uses from uses of the internet, and vice versa. With such voice over internet protocols (VOIP) as Skype, for example, computers become interchangeable with telephones. (Of course, Skype is available via internet connections on mobile phones as well.) Similarly, Blackberries (and similar devices) provide mobile email, with the potential for other internet functions (along with doubling as mobile phones). Mazmanian et al. (2005) report that users of these devices, especially groups with high communication loads, suffer from email overload and too much constant connectedness (hence the label 'crackberry'). In this case and some of those of described earlier, the use of the same type of functionalities on different devices (e.g. use of internet on mobile devices) suggests more commonalities than differences between the devices.

In addition to considering the fluidity of functions across ICT platforms, we cannot simply look at technology in isolation, but must also consider uses and attitudes to uses. For example, Baron and Hård af Segerstad (2010) report that Swedish and American university students like to be able to reach others on their mobiles, but do not like to be always reachable themselves. Similarly, Katz (2008b: 435) mentions the reachability conundrum as a 'prominent reason for non-adoption' of mobile phones, even though in Sweden, the USA and elsewhere, non-adoption is no longer really an option (at least for younger people, and perhaps eventually for all). It is true that with mobiles, users can exercise considerable 'control' (Baron, 2008a) over this reachability, exploiting such functions as voicemail, caller ID or texting. But texting largely only provides control over being able to choose one's words more carefully than via voice, and control over being able to communicate asynchronously. It does not eliminate reachability per se. Thus some have begun to speak of 'perpetual contact' (Rule, 2002).

Hence we can ask: at what point do the constraints of time, space and the number of people in interpersonal networks set upper boundaries to mobile and other forms of communication? Little is known about these limits, but they can only be established by taking into account the entire context of ICT uses for leisure and sociability.

Cultural differences in multimodal connectedness

Against this backdrop of emerging patterns of multimodal connectedness, we can begin to get a sense of the cultural differences in ICT use, and especially differences among types of multimodal connectedness. One interesting contrast is between Sweden and the USA on one side and Japan and Korea on the other. High use of mobiles and the rather low use of computer-based internet in Japan and Korea, compared with the relatively low use of mobile phones for internet and high use of internet with computers in the USA and Sweden, could point either to a lag between countries or to continuing divergence. We might expect lag, given, for example, Sweden's early use (in the 1990s) of mobiles compared with the USA. (It was the other way round with internet uptake.) But we might also expect continuing divergence, since, for example, Japanese and Koreans might remain wedded to using mobiles for many computer-based internet functions, particularly given long public-transportation commutes in these countries. Transportation factors might also help account for differences between Sweden (where more public transport is used) and the USA (which relies more heavily on private automobiles).

This contrast between how computers and mobiles are used for internet access helps contextualize findings such as Westlund's (2009) that in Japan, the mobile is often used for sending *keitai* mail, while transmission of email via mobiles has been relatively rare in the USA and especially in Sweden. This cultural difference has implications for mobile phone companies interested in expanding the uses of mobiles (e.g. for providing email or news services). But we should also note that from the perspective of end-uses (the main focus of this article), the early efforts of companies to affect user behaviour through pricing, standards and advertising may fade over time, especially as users' habits are influenced by the function of ICTs in everyday life and by the total volume of connectedness. In the process, the particular ICT platform via which connectedness takes place may become more irrelevant.

Yet factors other than the devices themselves may limit multimodal connectedness. Westlund (2008: 448) describes Swedes (who show little interest in internet or news on their mobiles) as feeling 'that media have become too pervasive, and ... want[ing] to keep their mobile phone as a personal communication tool'. By contrast, for the Japanese, reading books on mobile phones makes sense, given the long commutes on public transportation. Such different uses suggest that the same device is adapted for competing functions. But again, there are limits to this competition, since even if the same devices can be used for, say, reading email, making phone calls and watching film clips, a limiting factor is the user's attention. Even people who are able to multitask may need to make trade-offs or reserve particular devices for different functions. These choices may also be constrained in other ways: for example, we generally reciprocate communication by the means via which people have contacted us (e.g. internet, mobile or letter) and we do not have a choice to depart from this convention (except in the rare case of agreement to do so).

Another set of cultural differences relates to age. In Sweden, for example, the divide in uptake of the internet between the elderly and the younger population is still shrinking, while such a divide shows signs of persistence in the USA (WIP, 2009: 50). Sweden has achieved growing equity not by pushing for elderly access, as in Korea, but through being a generally egalitarian country, which may also account for the fact that the USA lags behind Sweden in this respect. In the future, of course, age may become less of an issue cross-culturally, as young people (who are heavy users of the internet and mobile phones) get older.

Focusing on ICT practices among younger people, we also see cultural distinctions. Historically, texting has been more common among young Swedes, while young Americans were more likely to do IM (Baron, 2008b). Axelsson (2010, who looks at age as a cultural variable, observes that not having a mobile phone is not an option among younger Swedes. Moreover, the number of voice calls among young Swedes – and even more so text messages – is larger than among Swedes at large. But both IM and texting are forms of written communication. Even if early cultural differences persist, we can expect that young Americans and Swedes will be multimodally connected in similar ways.

A key difference Axelsson (2010) has noticed between younger and older users is in the expression of intimacy on mobile phones. Young users are comfortable with this function; older users are comfortable using landlines but not mobiles for maintaining intimate interpersonal relations. Arguably, older users see mobile phone use in public as primarily geared to instrumental uses. Younger people are more used to carrying out their social life online, whether via mobiles or computer-based social networking sites. Yet

Axelsson (2010) also suggests that carrying out intimate friendship relations via ICTs is likely to persist into younger people's older lives.

Amid these differences, much about mobile phone use is growingly universal. Bolin (2010) found, for example, that Estonians have rapidly caught up with Swedes in their ownership and uses of mobile phones following the dissolution of the Soviet Union. This phenomenon partly results from the fact that young people have spent their entire life under Western consumer culture. Of course, consumer culture is now globalized (De Grazia, 2005; Stearns, 2001). Mobile phone ownership has become a universal feature of belonging to this culture: hence Bolin's finding that mobile phone penetration and use in Estonia do not seem to depend on economic factors. If cost were the only variable, Swedes (with whom Bolin compares Estonians) would talk more and use less texting than Estonians, since Swedes are richer. In fact, usage is the other way round (Bolin, 2010). If cost is not the primary factor, what explains the differences in talking and texting patterns in Sweden and Estonia? One hypothesis to explore is that Swedes and Estonians have adapted mobile voice over text uses to fit into their overall regime of multimodal connectedness, with Swedes exercising control via text while Estonians use voice because text-based control has not (yet?) become an issue.

Multimodal connectedness thus leaves a number of cultural differences to be probed further: Which ICTs dominate social interaction, consumption of information and entertainment? Is multimodal connectedness globally shifting from stationary to mobile? Do certain channels – voice, text, image – dominate more than others? Multimodal connectedness thus enables us to explore the range of ICT usage and its convergences and divergences in everyday life.

Theorizing ICTs and mediated everyday relations

Since multimodal connectedness is a useful tool for studying cross-cultural differences and similarities, the notion of multimodal connectedness needs to be further theorized. The notion of multimodal connectedness entails that people are increasingly tethered to each other via communication devices (whether we call such connectedness 'connected presence', 'co-presence', or 'always on'). If we consider the long-term nature of displacing face-to-face with mediated relationships, we might follow Licoppe and Smoreda (2006) in speaking of the growth of 'technologically-mediated sociability' (indeed, the two can be used synonymously here).[7]

One way to think about technologically mediated sociability is to compare mediated social relations with face-to-face interaction. Current research in this area largely centres on the social psychology of (PC-based) computer-mediated communication, and not on mobile phones. Yet this research might be relevant to the range of connectedness. For example, Walther's (1996) theory of 'hyperpersonal relationships' argues that when we meet people first online via text-based communication, we don't necessarily get to know them in a less rich way than we would in face-to-face interaction. Our knowledge of them may simply be different, for example, what we are willing to disclose to others via text differs from face-to-face interactions, and might yield a different way of getting to know another person. Recall Kang's argument (2008) that people find it easier to communicate some things via text than face to face. One limit of Walther's analysis is that it

is based on experimental (rather than real-world) settings, and is limited to strangers meeting for the first time (rather than people who already know one another). Nevertheless, Walther's work underlines the importance of not automatically regarding the 'richest' (most like face-to-face communication) medium as the one that creates and maintains relationships in the richest way.[8] In fact, we are starting to see non-experimental studies of people who get to know each other online first, and how this pathway benefits the connection between online and offline relationships (Mesch and Talmud, 2007).

A good illustration of how the richness of the communication medium need not correlate with the richness of the relationship is the teenage use of IM. Computer-based IM is typically not one to one in a directed sense; rather, adolescents use IM 'to chat with anyone on their buddy list who [is] available online' (Boneva et al., 2006: 213). Interestingly, teens report finding 'their IM conversations much less enjoyable than their visits or phone conversations' (p. 215). This finding may partially stem from the fact that teens are often chatting with anyone available (rather than with interlocutors particularly desired at that moment). However, Boneva et al. also note that since IM is used while multitasking, teens may 'not … [be] paying enough attention to any one of the conversations to enjoy it. In contrast, phone and in-person communication may capture more attention' (p. 215). Yet while IM may not be an ideal medium for one-to-one relationships, it fills another social function, namely the sense of being part of a peer group providing social support (pp. 215–16), that is, it may not be possible to have the same types of rich relationships or to enjoy them in the same way via the IM channel. Yet it also seems there are different types of richness: social support in the case of one form of group-mediated sociability, as against enjoyability in the other case of (paying full attention in one-to-one) mediated sociability.

The concept of multimodal connectedness will require a comprehensive theory dealing with how all mediated relationships differ from face-to-face relations. We will need to include the full range of modalities, from online spaces like Second Life (in which people experience 'being there together', Schroeder, 2006) to asynchronous texting and letters (Licoppe and Smoreda, 2006). This larger conceptual scope goes beyond what we need to understand about the uses of one-to-one voice communication via mobile phones in everyday life. Yet, as we have seen, mobile phones are used for a range of purposes, including to share online spaces, to fill the role letters once did and to create an 'always on' connectedness. Rather than merely seeing mobile phones as texting and voice devices, by placing them within the broader model of multimodal connectedness we can explore how the affordances of the mobile phone (including text, voice, images and a small screen) fit into the panoply of technologically mediated sociability.[9]

It may seem odd to theorize mobile phones in terms of multimodal connectedness or technologically mediated sociability. One might simply argue that mobile phones free us from the constraints of place. Such technology-centric (as opposed to use-centric, as here) arguments have been made. Katz, for example, has argued that mobiles enhance physical and social freedom: physical, because it allows people to go further and still stay in touch, and social, because 'it increases the choices in life' (2008b: 444).

But this position is doubly wrong. To be sure, mobiles increase choice, but they also constrain choice. As Katz himself suggests, not to have a mobile, at least for those under age 60 in 'wealthy industrialized societies', is frowned upon or worse (p. 443).

Consequently, there is no choice but to take on what Katz calls the 'added new complexity to the management of personal relationships' (p. 444). Such complexity adds to freedom, but also imposes new constraints: Those with mobiles are tethered in additional ways to their relationships, and the only choice is how to distribute these relationships across various devices and modalities. Each device and modality generates both constraints and possibilities (e.g. time devoted to contacting others, synchronous or asynchronous, and the affordances of voice versus text). Moreover, even the potential of enhanced freedom from physical boundedness that mobile devices afford is not necessarily exploited. In her longitudinal study of ICT use by young people in Gothenburg, Sweden, Thulin demonstrates that 'virtual movement' (regardless of the ICT being used) rarely substituted for 'physical movement' (2004: 154–5).

Global divides, cultural convergences

What can be learned from these comparisons for questions of adoption and diffusion, convergence compared with divergence and, ultimately, globalization?[10] It is commonly argued that social patterns of ICT uses are culturally specific. Yet, howsoever we regard concrete uses, the effects are to create more frequent, longer, more multimodal and more extensive ties.

An immediate counter-argument might be: aren't the uses of ICTs quite diverse when we think of the enormous differences between countries of the affluent North and 'the bottom billion' in the South (Collier, 2007)?[11] Indeed, when we think about new technologies and global social change, we tend to think of the vast and possibly growing gulf of inequalities that separate North and South, or more accurately that separate different regions of the world (Mann and Riley, 2007).

The next step often implicitly taken is to assume that divides in wealth and income will be reflected in digital divides or divides in access to (mobile) telephony. We must remember, however, that economic inequalities pertain to industrialization and living standards as a whole, whereas digital or communication divides may be far less applicable to relatively cheap consumer goods and technologies that have diffused rapidly, such as mobile phones (ITU, 2009; World Bank, 2008: 72–5). While the vast majority of the world's population does not have access to the internet, there are billions of mobile phone users, and 'mobile use in the developing world is more common than any other ICT, that is, personal computers or fixed-line telephones' (Shristava, 2008: 22).

This article has focused on use of ICTs for sociability and leisure. In thinking about such uses across alternative ICT modalities and across cultural contexts, we are led to ask:

- How important are different modalities for each of these functions?
- Does it necessarily follow that 'richer' modalities are 'better'?
- Do more frequent or more extensive ties or mobile connections foster greater social cohesion or personal well-being?

The facts here may be difficult to assess, except perhaps for evaluating how certain measures of psychological welfare are enhanced by mediated ties. Apart from this, it is difficult to discern a cultural stratification order that reflects digital or communication divides.

One way to highlight the impact (or lack of impact) of cultural differences in ICT usage is with regard to cost. Cost is clearly a factor in the level of consumption of voice compared with text communication on mobile phones (with voice historically being more expensive than text). But does it necessarily follow that cheaper texting as a modality is a 'poor' substitute for voice? At least in the affluent North, as we have seen, the real desideratum may primarily be control rather than cost.

In what sense does a greater number of ties, more time spent, or greater level of mobility, constitute greater wealth or more richness in ICTs? Are such factors relevant variables in assessing cultural inequality? Apart from the extremes of isolation and complete lack of access to distant others (important considerations for social justice), which level of connectedness has cultural significance? Put differently, if we exclude political communication and economic (or working) life, does the variety in mediated cultures of consumption or mediated leisurely socializing become an anthropological residual? If so, perhaps differences in multimodal connectedness or technologically mediated sociability can be regarded anthropologically in terms of different ways of life. Perhaps leisure uses of mediated communication can then become subject to cultural relativism, as with culinary or other fashions. Culture, in this anthropological sense of ways of life (Kuper, 1999), may be overshadowed by environmental (non-cultural) factors as determinants of differences in uses, such as whether people are required to spend considerable time commuting and how spatially dense or far-flung the networks with whom they communicate are.

However, there are also overriding patterns in the North produced by technologies of consumption and leisure that lead towards ever more uniformly diversified ways of life (Schroeder, 2007). The main significance of this cultural change is not anywhere, anytime and anyone, but rather that being multimodally connected with our social networks provides an increasingly tethered (to each other and to the sphere of mediated cultural content, rather than to place) and technologically mediated form of sociability and of consuming information.

Conclusion and outlook across cultures

What is common across cultures in relation to mobiles and other ICTs is that people are multimodally tethered to each other. We have seen minor differences, for example, in the case of Sweden and the USA, with greater divides between these two and the more mobile-centric countries in Asia. Still, for all these differences, people everywhere increasingly have to distribute their relationship maintenance, their information-seeking across and their consumption of leisure content across various devices. Progressively, people are coming up against choices about what combination of tetheredness they can manage: asynchronous or synchronous, one-to-one or one-to-many, and voice versus text versus image. Even if people's choices and uses of ICTs are still expanding, there are pragmatic limits on the total number of activities in which we can engage using various ICTs.

In Sweden, the USA and across the North, there will continue to be denser, more extensive, more time-consuming and more non-location-specific ties, since it can be assumed that the increasing popularity of untethered devices will continue to tether people even more. How these ties are distributed across ICTs depends on a variety of factors, including length of experience with a technology, lock-in to habits based on initial cost of different

forms of communication and environmental factors such as where the device is used (e.g. public transport, car, home). Similarities across cultures may, however, ultimately be shaped primarily by the possibilities for the extension and proliferation of tethered multimodal connectedness, which is beginning to face limits, even while it is still growing. Put differently, people's mediated communicative relationships will continue to become more extensive, but the limits on how far this envelope of technologically mediated relationships can be pushed is also bound to become clearer over time, in theory and in practice.

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Notes

1 The 'unit of analysis' problem is well-recognized in cross-cultural studies of new media (Livingstone, 2003) and one that other disciplines have responded to as well. For example, Esser and Pfetsch (2004) offer cross-cultural comparisons from a political perspective (or see Asard and Bennett, 1997, for a comparison of Sweden and the USA). Anthropologists sometimes focus on countries or nations, but also on regions or other locales (see the collection of anthropologists brought together in Ginsburg et al., 2002). Anthropologists do not, however, generally engage in cross-cultural comparison of ICTs, which has led Schlecker and Hirsch (2001) to speak of a 'crisis in context'; in other words, that anthropological or ethnographic knowledge can only be related to particular contexts. This is an area where Rantanen's 'mediagraphies' (2005) make a start, but far more research in this vein is needed. Finally, Castells (2008) has adopted a global perspective which overrides national contexts altogether, suggesting that 'now, through wireless communication, everything migrates to the space of flows' (2008: 449). Yet such a perspective (which unit of comparison should be adopted within this space?) does not easily lend itself to making cross-cultural comparisons of everyday practices, as undertaken here.

2 Television was solely a broadcast medium until the advent of videorecorders (and teletext, see Cawson et al., 1995); radio was used for audio broadcast (ham radio was an exception); and apart from answering machines, telephones were used for synchronous two-way audio communication. (The very early uses of telephones for broadcasting concerts did not have a lasting impact.)

3 Admittedly, the line between work and leisure is becoming increasingly blurred, including with respect to ICT use (Edwards and Wajcman, 2005: chapter 3), but this essay focuses on leisure and sociability rather than work.

4 For example, the 'Inglehart-Welzel Cultural Map of the World' (available at http://www.worldvaluessurvey.org/, accessed 4 March 2009) shows the USA as further from Sweden than any other country than Ireland on the dimension of 'traditional' compared with 'secular-rational values'. The map is based on an ongoing longitudinal survey, which has resulted in many publications, including Inglehart (1990).

5 The evidence for the longer-term processes in the following paragraphs is presented in Schroeder (2007).

6 The concept of 'multimodal connectedness' emerged in my conversations with Leslie Haddon, to whom I am grateful.

7 The issue of contemporary ICTs displacing face-to-face relations has been difficult to pin down, though a growing body of research has taken on the issue (see especially the work of Wellman and his colleagues on the relationship between internet usage and social ties, e.g. Boase et al., 2006). WIP offers relevant data as well. Internet users generally report increased contact both professionally and with friends and family (WIP, 2009: 210–24). Most say that home internet use has not decreased the amount of time they spend together face to face, though the proportion saying they less spend time together with family and friends is greater in Sweden and especially in the USA than those who say they spend more time together (WIP, 2009: 225–30). Internet users also say they spend more time socializing with friends and family than non-users (WIP, 2009: 231–2). These findings are not necessarily contradictory. It is possible that internet users spend more time face to face and in mediated communication with family and friends than non-users, but that internet users are also noticing a shift from non-mediated to mediated relationships. This phenomenon will need further disentangling in future research (and checks on the accuracy of survey responses).
On a related issue, it has already been mentioned that most internet users in Sweden, in the USA and elsewhere say that they multitask (e.g., listening to music, watching television, using the telephone) 'sometimes' or 'most of the time' while they are online (WIP, 2009: 322). The point here is to draw attention to the limits of this multitasking since, at a minimum, the focus of attention on one activity must at least to some extent detract from the other.

8 See Baym (2006) for a review of comparative media richness regarding social cues. Walther's ideas, which partly go against the idea that an absence of social cues is less rich, may not be novel among researchers of the social psychology of computer-mediated communication, but these ideas seem less widely known in media and communication studies. Moreover, they contradict the view (sometimes held by researchers and lay people) that face-to-face relations are always better (and in this sense richer) than mediated ones.

9 See Hutchby (2001) for the application of the notion of 'affordances' to communication technologies. Mobile phones may currently be limited to video images, moving and still, though Katz (2008b: 439) suggests that two-way video communication is on the horizon.

10 See Guillen (2001) for a review of debates about globalization and Tomlinson (1999) for an overview specifically in relation to culture and globalization.

11 Use of the terms North and South follows Mann (1999), though the terms 'global North' and 'global South' are also now coming into use.

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