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Cultural factors shaping the experience of information and communication technologies

Book section

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Introduction

This chapter[1] explores the diverse ways in which researchers have examined the effects of culture on the experience of information and communication technologies (ICTs). By illustrating this range of claims through contemporary and historical research examples, it aims to sensitise those involved in researching, using, designing or developing policy related to ICTs to the breadth and depth of potential cultural influences and cultural differences. In other words, the chapter is not meant to be a theoretical statement so much as a practical guide.

We start with a working definition that we could use to explore in more detail the range of elements that can be considered to be 'cultural' without ruling out the possibility that some people could argue for an even more inclusive definition. Therefore, in this chapter we shall understand by 'culture' some kind of commonly shared symbols, values, beliefs, and attitudes, as well as their translation into everyday social perceptions, behaviour and material artefacts.

The literature referring to culture indicates that it can exist at various levels, in various forms. In principle, it could stretch from what have been identified by some as lifestyle subcultures (e.g. Hippies) through the virtual group culture of internet communities (e.g. Internet Relay Chat or 'IRC') to the business culture of a corporation. In practice, in this chapter we will focus mainly on national cultures, but at times indicate such different 'cultures' within societies.

The problematic boundaries of culture.

First, some caveats. 'Culture' is probably one of the most contested words within the social sciences. There are different definitions in sociology, cultural anthropology, cultural studies, media studies and social psychology. Hence, different disciplinary or professional backgrounds will make different readers sensitive to various claims about what counts as 'cultural' or not. Moreover, there will always be grey areas.

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1 A more expanded review can be found in Thomas, et al. (2005)

Let us consider some examples. Within Europe, the early launch of a common mobile phone standard in the Nordic countries in part explains why the pattern of take-up over time has been higher than that in some other European countries. This standardisation process involved decisions by the state-run PTTs[2] as well as by regulators. So would this count as an example of an influence that was not in some sense cultural? After all, it was, in part, an administrative decision. At one level this is true, but those staff involved in those early negotiations pointed to a tradition, at least in more recent times, of Nordic collaboration (COST248 Mobile Group, 1997). Would that then count as being cultural?

Another example might be the area of education. To what extent do the particular education systems and particular educational arrangements (like the timing of the school day) in different countries reflect cultural values, versus to what extent do they reflect historical, political and administrative decisions which could have been otherwise? Or when the state, or any other body, intervenes to ban or regulate the use of mobile phones in certain public spaces, how much does that reflect local cultural values and how much is it just a decision of the body concerned, perhaps reacting to media concerns or to particular lobbying interests at the time? Again, could that policy have been otherwise? To what extent was it contingent?

The second caveat to mention is the relationship between culture and spatial communities. Due to the long history of nation-states in Western Europe the effects of culture can be confounded with those of a country. Yet, even in long-established nation-states different cultures have evolved side by side. For example, in multi-faith countries, such as in Switzerland or Germany, there are important cultural differences within the state. Meanwhile, language can also establish cultural communities that may be smaller than a country – e.g. the Basque language in Spain and France or the German, French or Italian speaking cantons in Switzerland[3]. Alternatively, cultural communities can be larger than specific countries: such as French-, English-, German-, Dutch- and Swedish-speaking communities, to name but a few. In short, culture should be treated as something different from the influences of country, ethnicity, religion and language.

The third caveat, that takes the division of culture further within nation states, is that we may also talk of the cultures of generations, of classes, of professions,

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2 ‘Post, Telegraphs and Telephones’. The Post Office in various countries was also responsible at that time for telecommunications.

3 For example, Gilligan and Heinzmann (2004) demonstrate that differences between these communities exist in terms of TV watching and radio listening.

or of sub-cultures related to lifestyle, etc. – the range of other possibilities was noted earlier. Although this will not be so developed in this particular chapter, it is worth noting that these are other ways of looking at culture within and across countries.

Cultural Influences

Social structural factors

When we start to examine the different elements of culture, there is a variety of what might be called social structural factors, such as the degree of homogeneity versus heterogeneity within a society. For example, a socially more homogeneous culture - i.e. with largely shared common symbols, values, behaviours, language and institutions influenced by a dominant faith or political ideology - may well facilitate the diffusion of ICTs. Certainly, on a smaller scale, diffusion studies have amply shown that an innovation spreads more easily in socially homogeneous than in heterogeneous social networks, provided that the social values of the network members are compatible with the use of that specific innovation (Rogers, 1995). For example, after the expiry of the Bell telephone patents at the start of the last century, telephone cooperatives organised the socially homogeneous networks of small marketing towns and their rural hinterlands states in Midwest U.S. Their networks resulted in an impressive telephone density that was actually higher for a time in the rural U.S than in its more urbanised counterparts (Fischer, 1987).

The hierarchical structure of a culture can both facilitate and retard the development of communication media. For instance, the evolution of nation-states and empires and their hierarchical princely administrations in Renaissance Europe was paralleled by the construction of the first postal services to coordinate these bodies (Sautter, 1951). With the advent of colonial empires in the 19th century these networks were extended by submarine telegraph cable networks all over the world partly for the same reasons (Headrick, 1981). However, the spatial diffusion of the telephone in late 19th century France shows how a hierarchical social structure can also hinder the development of a communication medium. In France, rural areas were dominated by clientilistic power networks that used their position as intermediaries in a hierarchical communication structure between the rural regions and the capital, Paris, to control local power. The new technology of telephony threatened to undercut these information filters by enabling uncontrolled communications between rural departments and Parisian decision-makers. Therefore the local decision-makers who co-financed the telephone lines did not push themselves to help construct the new lines and so deliberately delayed the growth and the use of the French telephone (Carré, 1991). There are even more drastic examples of this

negative effect on diffusion. For example the Sultan of the Ottoman Empire decided not to allow the establishment of a first telephone network in the capital Constantinople fearing that the new technology might undermine his autocratic rule. Meanwhile, Stalin halted the further residential diffusion of telephony in Soviet Russia while at the same time, the new Soviet Government established an up-to-date, all-Russian and centralised radio telegraphy network to command and control the bureaucracies of the party, the police and the state (Craemer and Franke, 1935).

Religion is one of the most important ingredients of a culture as it can influence the definition of the individual in society, especially the individual's sense of life, his or her liberty, the structure of communications (i.e. whether they may be more horizontally or more vertically oriented) and the development of an independent third organisational layer in society between the individual and the state (i.e. civil society). Religiously influenced values explain, in part, the position of women and the family and the structure of the educational, social welfare and health systems. So, the legacy of religious structures and values form basic matrices that can influence the ways that people communicate[4]. Illustrating this, research on the extent of 'interpersonal trust' (i.e. the degree to which an unknown person is trusted), examined in World Values Surveys, shows a drop in trust from Lutheran-influenced to mixed Lutheran-Catholic, to Catholic, Orthodox, and Muslim cultures. It remains to be seen whether this would translate into the different degrees of acceptance of media such as Internet Relay Chats or social networking sites, where chatters or visitors can meet complete strangers even if the site operator labels them as being 'friends'.

Education, both as a structural influence and as experienced by individuals can be considered to be partially cultural in nature. The structure of national educational systems, the stress laid on selecting the best students versus attaining more social inclusiveness, as well as the content of literacy programmes, are all related to such values and priorities. Several studies show that educational attainment, which varies both within and between countries (and cultures) is actually one of the major influences explaining levels of internet adoption and of drop-out rates (Rainie, 2003). This is also true for 'literacy', originally defined in terms of reading and writing but now including skill requirements in an information society under the term of 'digital literacy' (SIBIS, 2003). The mental capacity to manage abstract thinking, in part influenced by education, is very unevenly distributed in social terms and is a

4 There is also a far more direct influence of European monasteries: they established the first Trans-European letter services in the Middle Ages.

strong factor shaping ICT adoption and the successful integration of ICTs into the routines of everyday life (Weiss, 2001; Iske, et al., 2004).

As argued in chapter four, Media Studies research, alongside that of other disciplines, has highlighted ways in which the mass media affect our perceptions of reality, including perceptions of ICTs, from symbolically contributing to their fashion status to raising concerns about their social consequences. This can affect motivations to acquire these technologies, how they are used, and indeed how that use is regulated, if we think about parents making rules about children's use, for example. Of course, national mass media may themselves be influenced by the wider national culture. For instance, the *EU Kids Online* study discussed in chapters four and nine noted that the fact that pornography received less attention in the Norwegian press compared to some other national media may well reflect the widespread perception of child sexuality as being more natural in that country (Haddon & Stald, 2009). But of relevance to this chapter, the mass media may also be considered to be cultural influences as institutions, i.e. they have their own cultures. In this respect Hallin and Mancini (2004) discuss the different media system that correlate with different regions in Europe, whose countries are historically and culturally related. Meanwhile chapter four of this volume uses empirical data to show the different national media styles that influence how content is presented – from how it is classified, to what categories of news receive more attention to variations in whose voices are heard in the national media.

Ethnicity can play a role at both the collective and individual levels. Minority ethnic groups within countries can be organised so that communications pass through family and association channels. Jewish diaspora networks and the transnational communities of Dominicans in the U.S. provide examples of how easily ethnic communications are able to overcome the barriers of distance (Portes, 1997). On the individual level, ethnic background has played an important role in the diffusion of the internet in the US, as Afro-Americans and Hispanics have consistently lagged behind whites and Asians (Hoffman and Novak, 1998). Ethnographic research on West Indian immigrant communities' use of ICTs in the UK (Miller & Slater, 2000) as well as of immigrants' communications in the Netherlands and in France (Calogirou & Andren, 1997) all show convincingly that ethnic background strongly influences the intensity, the social composition and the geographical reach of social networks and how they are maintained over distance by use of the telephone, mobile phone or e-mail (LeRay, 1994).

Language is a major carrier of culture. The initial domination of the Internet by English-language websites is a well acknowledged issue for non-English speakers (Vehovar, et al., 1999; NTIA, 2000; Lazarus & Mora, 2000). Although there are of course web-sites and services available in a variety of languages,

overall there is simply less content than for those who cannot speak English, even after the arrival and dramatic growth of the Chinese language on the web. A related point is actually noted in chapter eight regarding the more limited Music2.0 options open to those who do not speak English. More generally, the issue of language on the internet can be more of a barrier for non-English speaking older people (Gilligan, et al., 1998) and the less well-educated who are less likely to speak a foreign language. The influence of language can work at other, more subtle, levels as well as just being a barrier to the take-up of ICTs. For example, software is often supplied in English first and then other languages, affecting the timing of when it becomes more accessible to different language speakers. Lastly, it is also important to take into account the role of orality in a culture in relation to writing, the type of alphabet, the use of images in communication etc. Such factors may influence people's competencies concerning, for example, the use of i-MODE (notably the way the Japanese abbreviate messages).

Lastly, one could argue that structural factors could include various elements from what might be called the 'social constructionist' tradition of analysis[5], pointing to the ways in which expectations and understandings of roles are social constructed. For example, in what ways are gender roles experienced differently in different cultures, including the degree to which strict gender divisions are maintained across different aspects of life? To take a particular example, women's participation in the labour force varies, both in terms of the proportion of women working and the nature of that work, which can have a bearing upon personal disposable income and thus the capacity of women to acquire ICTs.

In the same spirit, how are children's roles (and parents' roles) socially constructed and experienced differently in various countries? This has potential implications for parent-children relationships around ICT (Haddon, 2004). For example, one pan-European study revealed different parenting styles in different European countries, as illustrated by the ways in which parents regulated their children's TV viewing (Pasquier, 2001).

Temporal structures

The time structures of different nations, but also of different social groups, can vary. Examples would be the timing of when work starts and ends (as well as the length of the working day), the degree to which people engage in organised leisure activities, be that after school or after work, and differences in the timing of activities even in matters such as when people eat. Quite simply, these can all

5 For example, the social construction of childhood, see James and Prout, 1997.

affect the timing of when people use ICTs, be that watching media, going on-line or communicating.

One study of the use of i-Mode's successful take-up in Japan evoked, amongst other things, an argument about time distribution (Heres, et al., 2004). This noted that Japan is a more outdoor-oriented society than many European countries, given that Japanese homes are small and lack privacy. Therefore people spend a good deal of time outside the home, which means that home-based-ICTs are not so attractive. The study argued that i-Mode became popular in part, but only in part, because having the internet in the home was not so appealing but internet-like services were nevertheless desired.

Turning to the subjective experience of time, one qualitative study involving focus groups from 6 European countries noted that there were some systematic national differences with regard to how people articulate their subjective experience of time (Klamer, et al., 2000), an observation confirmed in multi-cultural settings by Levine (1997). While many participants acknowledged that they led busy lives, in some countries there was a great willingness to talk about this in terms of time pressure and stress[6], whereas in others participants talked more about the importance of being in control of their own life, of avoiding stress – but not saying they expressed stress[7].

This subjective dimension is relevant for the use of ICTs since whether people in different cultures perceive problems with time might have a bearing upon decisions to adopt technologies that offer solutions in terms of time-saving or, more commonly, allowing the more flexible use of time. And such perceptions might have a bearing upon people's willingness to invest their time in acquiring and learning to use ICTs.

Lastly, we have to consider various cultural expectations about time (Levine, 1997). A first example would be social time norms – e.g. norms about when and when not to communicate. Apart from norms about how to make calls, how to speak, there are also ones about how long to call and when to make certain calls. As long ago as 1903, Simmel (1976) had observed that the time stress in modern cities is considerable and that social norms of punctuality shape the rhythms of urban sociability. A second example would be that in different countries there sometimes seem to be different expectations about how rigid the boundaries should be between work time and free time. For example, when comparing the responses of US and Dutch focus groups, this willingness to blur home and work times was one of the differences between the two national groups (Mante, 2002). Once again, this could influence the timing of when ICTs are used for work and

6 For example, in Spain and Italy in this study.
7 For example, in Denmark in this study.

for non-work purposes. In fact, there has been discussion of countries' orientations to time, with monochronic and polychronic time cultures[8] (Hall, 1983). One study utilised this concept to explain Singaporean people's ambivalence about the use of the mobile phone to arrange meetings when it led, for instance, to a decline in punctuality (Chung & Lim, 2005).

Value systems

An obviously relevant value identified in the ICT literature is 'openness to technological innovation'. In other words, while potential future users of technologies can be characterised by their general social position, their position within social networks, etc. the degree to which they are exposed to new information coming from outside, and their receptiveness to these innovations, is also important. This is partly used as a rationale for ICT companies to test their products in some countries first, where this value is high – such as the UK, Hong Kong and Japan. Meanwhile, diffusion studies have analysed the effect of specific sets of values on the speed of the diffusion of innovations and on the social setting of the innovators (Rogers, 1995).

One particular value distinction that occurs in a number of guises is that between an orientation towards being individualistic or to the group, in whatever form. For example, one Italian study hypothesised that the mobile phone was so popular with Italians because of the individualism and the great flexibility that they have developed in the world of work (above all in regions of advanced capitalism, for example in North East Italy) (Fortunati, 1997). In this case, individualism is cited as a factor shaping the rate of adoption of an ICT. In contrast, one study of Korean life argued that people in that country are often considered to be members of families more than individuals (Yoon, 2002). This is illustrated in the way that young people do not really have personal space in the home (e.g. their rooms are accessible to other family members without permission), which can in turn influence the nature of ICT adoption. Moreover, ICTs (like the PC) are often familial rather than individual possessions. The study also argued that in relation to the mobile phone, the above values mean that for many young people, calls from parents are more significant than calls from peers, they are seen as a form of 'mobile affection', an expression of family bonding. Hence, the study argues that the specific orientation to family in Confucian Asia (i.e. also China and Japan) makes a difference to the use of the mobile phone compared to the Western studies that often stress how children use the mobile phone to be more independent of parents.

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8 To take one important dimension of these concepts, in monochronic cultures, people adhere more strictly to schedules while in polychronic ones they change plans more easily.

Finally, the work of Hofstede (1980) and Trompenaars (1993), looking at cultural norms originally from a managerial perspective, has been cited in some studies of ICTs, e.g. one looking at different patterns of adoption of the internet across countries (Thomas & Mante-Meijer, 2001). If we take the work of Trompenaars, these cultural norms include elements such as individualism vs. collectivism, whether cultures have universalist or particularist orientations, whether cultures are specific or diverse, whether cultures are affective or neutral, how cultures accord status (whether it is ascribed and achieved), and how cultures relate to nature (e.g. controlling it vs. letting it run its course). Sundqvist, Frank and Puumalainen (2005) found that uncertainty avoidance (i.e. the propensity to avoid risks and to follow established rules) influenced the speed of mobile telephony diffusion. The prevalence of the value of uncertainty avoidance reduced the adoption speed in early adopter countries, since accepting uncertainty is necessary for trying a new product, but then increased it in later adopting countries. This confirms the standard assumptions of diffusion theory about the importance of imitative behaviour for mass adoption. Erumban and Jong (2006) found that another indicator of value - 'power distance', discussed in chapter three – as well as uncertainty avoidance influenced the world-wide diffusion of PCs. This was found to be a robust result even after controlling for levels of education and income. Meanwhile, the analysis in chapter three of this volume found a real, though limited influence, of uncertainty avoidance and power distance on web 2.0 usage in Europe.

Communication cultures

Communication forms, patterns and expectations have been identified as potential influences in various writings on ICTs. One Finnish study by Puro (2002) raised the question of whether one can talk about a 'communications culture' consisting of expectations of appropriate speech behaviour (e.g. about the absences of small talk, the value of silence, the importance of being direct). That study discussed how these expectations were reflected in both fixed phone and mobile phone patterns of interaction, but also how the mobile might challenge traditional Finnish speech culture.

Other studies have distinguished between 'high context' or ''low context' communication cultures (Hall, 1983). In a low context culture most things have to be explicitly stated as people do not necessarily have a common understanding of the context in which behaviour takes place. For Hall, France, and its proverbial 'on dit' ('one says'), was an example of a high context culture, whereas the United States, with its multiple ethnic groups, was an example of a low context culture. Such different contexts might help cast light upon patterns of communications in different societies.

In some countries it has been argued that it is the social control of certain forms of communication that shapes communication preferences. For example, Japanese researchers have argued that mobile e-mail in Japan was popular amongst youth partly because of the strong regulation of voice telephony in schools and public places (Okabe & Ito, 2005). Given 'no mobile phone' signs in trains and buses, and regular announcements over the loud speakers to this effect, almost no participants in this study made voice calls in these settings, but instead used mobile e-mail extensively.

Material culture

Finally we have material culture, where different cultural values have shaped and become embedded in the physical world, as reflected in the organisation of space (especially the rural-urban division), the styles of dwelling places, the types of item to be found in them and such matters as clothing fashions.

Arguably the national layout of urban centres reflects cultural influences as well as historical events. In single-node urban systems, the capital dominates the country such as in France and Britain. These encourage communication systems to be developed, deployed and used in different ways compared to multi-nodal system, such as in Germany or Switzerland. For example, the spatial concentration of potential mobile telephone customers in South East England facilitated the rapid roll-out of mobile telephony around the British capital while delaying that development in regions less attractive for the operators. In the multi-node case, every communication technology will tend to include a strong long-distance component.

The housing characteristics of different countries (e.g. size, interior design) vary. For example, in the 5-country qualitative study of telecommunications in 1996 there were differences between a number of European countries as regards the strategy of going to another room to seek privacy when making or receiving calls (Haddon, 1998). However, on further analysis this mainly reflected the distributions of different sized houses in the countries (and implicitly, different numbers of rooms). Comparing houses of the same size, many of the statistics differences disappeared, suggesting this search for privacy reflected the nature of the housing stock more than other values.

The spatial design of housing and the location of facilities within the home, is also a consideration. For example, in the UK (and other countries) the fact that in the early 20th Century many houses only had heating in the central room meant that people congregated there. Only later when other rooms were heated, and with the arrival of central heating, did children especially spend more time in separate bedrooms. This clearly might have some bearing upon where ICTs are used but also upon how they are used, given a lack of parental surveillance

in these private spaces (as in current discussions of children's media rich 'bedroom cultures' in Bovill and Livingstone, 2001).

Lastly we have artefacts and cultural tastes. Here we might consider phenomena like fashion, cultural orientations towards creativity and novelty (in leisure activities, clothes and appearance) as well as the role of elite avant-garde culture. In other words, we can think of culture as expressed in areas of life such as art, decoration, design and commercial offerings. Such matters sharply distinguish Northern from Southern Europe, the latter being closer to Japan in terms of its fashion culture. This becomes all the more relevant when we consider that ICTs are not just functional artefacts but symbolic ones, which are as subject to the influences of fashion as are the other items we consume in everyday life. One need only think of the Nokia fashion mobile phones and the stylish PC colours now offered in some countries such as grey, black and silver computers in the US.

Conclusions

The intention in this chapter has been to be inclusive and fairly open-minded about ways in which we could see factors as being somehow 'cultural' in nature. No charting exercise would claim to be absolutely comprehensive, and indeed this is probably an impossible goal given that different researchers use slightly different definitions of what counts as cultural. Moreover, we acknowledge that boundaries around different aspects of culture are not fixed: the same examples conceptualised under one heading could, from a slightly different viewpoint, also fit under another.

Primarily, the chapter, and indeed the fuller report upon which it was based, can serve as a tool for making us sensitive to the wide range of ways in which factors conceptualised as cultural influence our experience of ICTs. This can help our attempts to understand differences in national patterns of diffusion, such as in analysis of the digital divide between countries. The chapter also reminds us that we have to ask about the specificity or generalisability of research conducted within a particular country. For example, if presenting country-specific research to an international audience, to what extent could those in other countries learn from it? To what extent might various factors, including cultural differences (but also the national histories of markets, the socio-demographic distribution of population, etc.) mean that findings are more or less likely to be replicated elsewhere? Finally, the chapter sensitises us to some problems and issues around defining culture, some of the limits of cultural analysis and areas where we might need to develop our thinking further.

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