Technology as text: the changing meanings of the fixed and mobile telephone

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Abstract

Recent sociological studies of the mobile phone and the fixed line telephone have drawn attention to the changing meanings of communications technologies. Whilst manufacturers often represent "preferred" uses in product marketing, users frequently subvert such intended purposes, modify them or invent new practices. Mobile phones, whose "essential" function was verbal communication, were initially designed and marketed for business and professional use. Today we use them to chat and keep in touch with our children. Their basic function of speech communication has been subverted as teenagers opt to for text messages. School-children have invented new social uses despite the efforts of mobile phone companies to persuade them otherwise.

Traditionally, social scientists have assumed that a device such as the telephone has an intrinsic purpose determined by some essential property of its technology. Such an approach stands in contrast to the analysis of works of art or products of the media where factors such as religious belief, social values and political ideology are routinely invoked to explain their various interpretations. This paper suggests that such a dichotomy is false. Concepts from cultural studies and communications theory are used to argue that technologies such as the telephone are cultural products with symbolic as well as economic value and that users can shift their meanings.

Keywords: technologies, cultural products, symbolic value, social uses.

Introduction: Technology and meaning

The persuasive techniques employed by manufacturers and service providers to promote their products have become increasingly sophisticated in a highly competitive marketplace. Advertising agencies use irony, self deprecation, life-style and other tech-

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niques which seem to draw on post-modernist theory. However, when technologies are on sale, there is rarely any debate about what their use and purpose might be. Whilst a marketing department might have fun bending the gender of the user of a microwave oven in order to persuade us that one particular brand is better than the others, the meaning of the product is clear: we use it to cook (or rather re-heat) food.

The widespread assumption that the purpose and meaning of a technology is unproblematic is also to be found in academic studies. Here, the design and production of a machine or system rather than its consumption have long been the focus of attention. Many social theorists have assumed that a device such as a telephone has an intrinsic meaning or purpose determined by some essential property of its technology. Investigators accept that the economic and social benefits which a technology offers may vary but they assume that its very nature sets a limit on its uses as well as on the possible trajectories of its development.

Such a deterministic approach stands in stark contrast to analyses of works of art, literature or to studies of the media. In these domains, factors such as religious belief, social values and political ideology are routinely invoked to explain the various and sometime shifting meanings of cultural products. Thus a dichotomy appears to exist in the way we treat production. The production and interpretation of works of art, literature, music or the media are seen to be contingent whilst the production of a technology is considered to determine its meaning and constrain its uses within fixed limits.

Of course, this dichotomy has been exaggerated here to make the point. The work of Bijker, Hughes, Pinch (Bijker, 1995; Hughes & Pinch, 1987) and others has shown that social interests affect the design and production of technologies and that the meaning of a technology can be quite fluid before its final form is fixed. However, even for social constructivists such as Bijker, the focus is still on the meaning of a technology for its producers. It is only relatively recently that consumption and use has drawn attention. When we look at the meaning of technologies for consumers, we see that the intentions of designers, manufacturers and marketing departments do not always or even routinely persuade users to accept them. For example, personal computers were sold to parents as technologies which would benefit the educational development of their offspring. Children sat in their bedrooms and played computer games (Murdock *et al.*, 1995). Video recorders were designed to play commercially produced material purchased from a retailer. Viewers used their machines to time-shift their favourite soap operas and record their own feature films from scheduled broadcasts.

Perhaps the most striking present example of a shift in the meaning of a technology is in the use of the mobile phone. Mobile phones were initially designed and marketed for business and professional use. Their "essential" function was verbal communication. Today we use them to chat and keep in touch with our children. Even their basic function of speech communication has been subverted as teenagers opt to text their friends. Recent research has revealed a multitude of uses invented by school-chil-

dren despite the efforts of the mobile phone companies to persuade them otherwise. Interestingly, the shift in meaning of the mobile is an almost exact parallel of the change in meaning of the traditional telephone which users brought about in an earlier era. Only the increased speed of the change distinguishes the two experiences.

Communications technologies seem to be particularly prone to shifts in use and meaning. Radio was first commercialised as a two-way wireless communications technology. After 30 years as such, it rapidly became a one-way broadcasting system used to bring information and entertainment to people's homes. Perhaps the close link between communications technologies and the content of the messages which they carry make their meaning particularly flexible. Whether or not this is the case, the alternative meanings given to communications technologies suggest that the types of theory which have been applied to media content could be applied to media technologies. In the next section, some concepts from the semiotic perspective on communications which can help us understand these shifts will be examined.

Meaning-making in the media

An important theme in media theory has been the idea of communication as the production and exchange of meaning. In this perspective, newspaper articles, television programmes, cinema advertisements and other media "texts" are not simply concerned with the transmission of information but are "read" in specific cultural contexts. Media messages, be they visual, textual or verbal, interact with viewers, readers and listeners to produce meaning. Thus communication is a social interaction which constitutes an individual as a member of a particular culture or society (Fiske, 1990: 2). In this way, readers and viewers of a certain age and educational background will respond to Shakespeare's Macbeth or TV's Big *Brother* in broadly similar ways since they belong to the same culture and read similar meanings into the texts. Young people, albeit from the same society, may express their identity as members of a different sub-culture by reacting in a contrary fashion. Since the authors of communications encode meanings which express their own identities and values into their messages, their intentions may be missed, subverted or altered when a message is decoded by someone who does not share that cultural context. When President Bush used the word "crusade" in his response to the events of September 11, the meaning read into it his speech by many in the Middle East was very different from that assumed by his American audience.

This perspective on communications shifts the emphasis from the sender of the message to the receiver. The media text itself, replete with signs which express the intentions of the author, interacts with its readers who bring their cultural experience to bear on the signs and codes which make up the message. According to Stuart Hall (1980), readings may be "preferred", "negotiated" or "oppositional" depending on the cultural context of the receiver. Such an approach is at the root of semiotic theories

of communication but it has also informed cultural studies of the media and it is the latter perspective which this analysis seeks to apply to the development of fixed and mobile telephone technologies. The importance of meaning will be applied not only to the content of telephone communication but to the telephone itself as a cultural arte-fact. Using this approach some recent sociological studies of traditional and mobile telephones will be used to illustrate the notion of technology as text.

Technology as cultural production

Raymond Williams has argued that to understand social structures, we must study cultural meanings and values (Williams, 1976). Williams puts forward a social defini-tion of culture in which meaning plays a crucial role. In such a perspective "culture is a description of a particular way of life which expresses certain meanings and values not only in art and learning but also in institutions and ordinary behaviour". Recent elaborations of the cultural approach to social relations add technology to these cat-egories. Thus the study of the social role of the telephone demands its investigation as a cultural product. In a cultural analysis of fixed and mobile telephones, we seek to clarify the meanings of these technologies and the implicit and explicit values which they represent in a particular way of life.

Du Gay, Hall, Mackay, and others have developed the concept of the cultural cir-cuit (see fig. 1) to investigate the ways in which technological artefacts are brought into our everyday lives (Du Gay *et al.*, 1997).

According to this model, the effects of technologies are not determined primarily by the circumstances of their production: their social import is symbolic as well as eco-nomic. Whilst social science has traditionally seen the mode of production as the key determinant of the meaning of a technology, cultural theorists argue that the processes

Figure 1
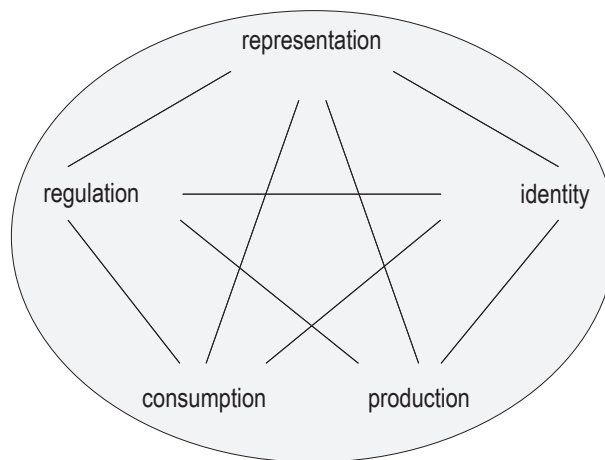
of *consumption, identity construction, representation and social regulation* of tech-nologies are of equal *moment*. It is the articulation of some or all of these *moments* which shapes the variable and contingent outcome of a technology. These processes are said to constitute the cultural circuit. To become a cultural artefact, a device such as a mobile phone, must move through the various moments of the cultural circuit and in so doing acquire cultural meaning.

For instance, if we look at the design and marketing of a specific device such as one of the Nokia N Series mobile phones, we can see that it is the product of a particular organisational culture (in this case the Nokia Corporation). The characteristics of that culture affected the way in which these video, music and photo-storage enabled phones were developed and, ultimately, whether they will be commercially successful. Nokia designers had to have an image of the potential consumers and a notion of their interests and desires before any physical artefact or software could be produced. In their marketing activities, advertisers had to construct representations that allowed consumers to identify with the product. Connotations of "personal video-maker", "mobile juke-box", "family photo-lab" and so on are used to give the new product meaning. Marketing on the Web allows potential customers to browse "N Stories" which describe the use of the different versions of the phone by a variety of individuals with whom they might identify. Thus symbolic as well as physical work is required to bring a technology into our culture.

However, the work does not stop there. If we apply Hall's analysis of media dis-course to technology then users of a product such as a fixed or mobile phone may "read" the new technology according to the intended "text" of the designers or they may not. Technologies may be "read" in ways which have never occurred to its pro-ducers. Such "negotiated" and "oppositional" readings reveal the active nature of consumption and show us that technologies just like works of literature or media texts do not have fixed meanings.

Even the formal and informal rules on how and when we use technologies change as their meanings are extended, altered or replaced. Technologies such as the mobile phone blur the boundaries between the private and public sphere. We conduct private conversations on mobile phones in public spaces such as trains and shops. Thanks to devices such as the 3G mobile, we can download MP3s, text our friends, take photo-graphs or play electronic games as we commute to work or wait for an appointment. Initially, unfamiliar behaviour of this kind goes against established classifications of public and private space by being both public and private simultaneously. However, whilst efforts have been made to regulate the use of mobile phones, as we adjust to the new technologies and as producers modify products to take account of public concern so our notions of what constitutes normal behaviour change and we adjust our clas-sification.

The changing meaning of the traditional telephone

In common with other technologies, the advent of the telephone took place in an existing technological context – in this case, the telegraph which already had well established commercial and social roles. It is unsurprising that the new telephone companies and their subscribers transferred the uses and meanings of the telegraph to those of the 'phone (Fisher, 1992: 81). However, the emergence of the telephone was also accompanied by new practices and new concerns. As with the discussion of the mobile phone today, there were claims about decentralisation, accessibility of information, concerns about legitimate use and the boundaries between the private and public. The telephone companies played a predominant role in these discussions since they wanted to persuade people to subscribe and as a consequence sought to teach consumers how and what to use it for.

For about forty years after the establishment of the first telephone networks, telephone companies provided interactive voice communications but also offered information services such as news and weather forecasts and broadcast public events such as concerts and church services (Marvin, 1988: 222). In a few cases private companies were established to develop the telephone as a broadcast medium. However, the audiences for such services were small and, following the model of the telegraph, the use of the telephone for business and professional communications made up the great proportion of network traffic.

In many European countries and above all in the USA, telephone companies saw their main market in facilitating business and increasing organisational efficiency (Cherry, 1977). If the telephone was to be used in the home is should be for household management such as ordering goods and services. For decades telephone companies discouraged women's conversations on the telephone. These were seen as an 'abuse' of the technology. In some areas of the USA, Bell telephone even refused to connect private subscribers who did not fit their own conception of a telephone user. The "preferred" meaning which developers read into the telephone caused them to concentrate on the solution of the technical problems which hindered its development as a business and professional network.

This emphasis on technology caused the telephone companies to ignore the social role of communications. Challenging the intentions of the telephone service providers, the public at large found other uses for the device. Subscribers used the telephone to chat and to make "telephone" visits (Fischer, 1988: 50). In some social groups, the meaning of the telephone moved from the business model preferred by the industry to one of sociability. Service providers considered such use inappropriate and would, for instance, put through "proper" calls before connecting "social" communications. In the USA, telephone directories had sections which explained the "proper" use of the 'phone to subscribers. It is instructive to realise that the huge market for telephone services only emerged when what were considered marginal users – housewives, isolated farmers and other social users – imposed their own meaning on a technology intended for other purposes. The meaning of the telephone was and is gendered.

American housewives in rural communities countered their isolation and sustained friendships ties by making telephone calls. Anne Moyal (1992) has shown that the Australian women make far more calls for personal exchange and communication than to order goods and make appointments or other arrangements. She argues that women's use of the telephone plays a crucial role in holding together families and communities. Ironically, today it is not uncommon to see advertisements seeking to persuade men of the value of chatting on the telephone.

If the meaning of the telephone was contingent on gender and social role during its development, it also showed a high degree of national variation. Diffusion of the telephone in Europe was much slower than in the USA. In Britain, the Government initially saw the telephone as a threat to the telegraph monopoly of the Post Office. The belief persisted that the telephone was a technology for the city, industry and business and was not as the London Times put it "an affair of the millions" (Perry, 1977: 76)

Patrice Flichy records that in France, a similar attitude prevailed amongst the political and social leadership (Flichy, 1995, p. 92). The telephone was not considered a household technology. In the 1930's, whilst network capacity exceeded demand, fewer than 10% of households possessed telephones. Eventually, the French government resorted to price reductions and door-to-door sales techniques to promote telephone usage. As late as the 1970s, public telephones required the caller to purchase a *jeton* or token in order to make a call.

Flichy explains the lack of demand by reference to the social context of French telecommunications. French farmers and their families did not have the same need as their American counterparts who were often dispersed over wide areas of the Mid-West. People in France maintained social interaction by traditional means, meeting in fields, churches and communal washing places. The telephone was not a necessary instrument of social life until the expansion of towns and cities in the 1950s. After this, demand for the telephone rose sharply and demand outstripped supply. In the 1970's, France became a centre of telecommunications innovation with the construction of a digital network and the introduction of the *minitel* terminal (Sutherland, 2005). Before the rise of the Internet, the French *télétel* system had value added services, electronic directories and graphical displays – features which Web users would find familiar today. *Télétel* subscribers joined chat rooms, adopted different identities, played games and listened to music. The telephone which in the interwar years had little meaning for most of the population had become a technology with a variety of meanings and played an increasingly important social role.

This short review of some features of the development of the land line telephone shows that its meaning was not prescribed by some inherent technological logic but that it shifted according to social context. What was seen as a necessity by many Americans was dismissed as a means of mass communication by powerful sections of British and French opinion. Marginal users forced US telephone companies to extend the meaning of the telephone from that of business and professional communication to one of sociability. The telephone was also a source of pleasure derived from chatting,

telephone "visits" and in an early phase from the broadcasting of concerts and sports events. Finally, we have seen that the use of the telephone was and is differentiated by gender.

The mobile telephone

The shift in use and meaning of the mobile phone initially followed a very similar trajectory to that of the traditional telephone. In the 1980's and early 90's, European and US mobile phone companies adopted an approach which repeated the strategies of Bell and other early fixed telephone businesses. The mass market was neglected in favour of the business and professional sector where high prices could be imposed. Just as the concerns of engineers restricted the development of the fixed telephone as a means of social interaction so it has been argued, their preference for other forms of telecommunications initially delayed the development of the mobile phone (Brown, 2001: 7-10). Whilst the cellular concept had been proposed in 1947 and its technological problems overcome by the 1960's, the first mass market for the system did not get underway in the USA until 1983.

As with the fixed telephone, social context has informed the meaning of the mobile and has led to unexpected developments. For instance, the fact that a large number of Finns spend their holidays on small islands, in the countryside or on boats has combined with Finnish commercial, regulatory and geographical circumstances to put Finland in the forefront of mobile use and development (Roos,1993: 3-4, Kopomaa, 2000: 28-30). Scandinavia in general seems to have learned the lessons of targeting an exclusive market and shifted strategy to pursue both business and mass mobile use.

In the early 1990s mobile phones were mainly the preserve of business users and to be permanently contactable was the privilege of the few. Moreover, to use a phone in public, it had to be displayed and constituted a powerful status symbol. In the UK, many people were delighted when Nigel Lawson the Chancellor of the Exchequer put a tax on mobile phones (ref 15). However, advertising campaigns in Scandinavia distanced the mobile phone from its "yuppie" users and used a discourse with which other sections of society could identify.

Kopomaa (2000:33) has defined three stages in the uptake of mobile phones in Finland which can be applied elsewhere and which mark out their changing meaning. The first of these is the "class market". The use by businessmen outlined above. From about 1990 until 1995, a second stage emerged, the mass market. In this period, the mobile phone became a personal technology used by local authority workers, plumbers, delivery drivers and housewives. At this moment a fundamental division between white- and blue-collar work – access to a telephone – was changed (Mackay, 1997: 275). The mobile phone very rapidly moved down the social scale. Finally, after 1995 use of the mobile phone diversified still further and mobiles were produced for different groups and lifestyles. The mobile acquired very subtle shades of meaning as it was personalised and became multifunctional (games, photography, internet access, etc.).

Mobile phones found a meaning in identity construction (Fortunati, 2001). Young people wore their phones and changed them in the same way that they wore and changed their trainers.

Despite the strong parallels in the changing meanings of the fixed and mobile telephone, mobiles show some distinct differences. Like fixed telephones, they are a transparent medium (Cooper, 2001: 20). When we talk, we forget their mediation. However, unlike fixed telephones they are small, portable and offer the user the possibility of being permanently contactable. In these circumstances, the threshold to make calls or send a text has been lowered and new patterns of communication have emerged (Koopomaa, 2000: 63,112). Short messages and calls are more common and callers use the mobile to express moods or transmit an experience as they happen. Rather than bring work to the home, mobile phones allow users to keep in touch with home, partners or children whilst they are at work. Mobile use has also been affected by their increasing complexity. We can now send and receive calls and text messages, use the phone as a clock, calendar, address book, calculator, games machine, and internet browser. However, it would be a mistake to put new meanings and new patterns of use down to increased functionality. The multiple meanings of the mobile phone, which this short essay can only touch on, result from the interaction of the technology with users in specific social contexts. A mobile can be a business tool, a toy, a marker of identity, a means to sustain social relationships and serve many other purposes. Different meanings emerge as users bring their specific cultural experiences to bear on the device.

Recent research on the use of mobile telephones by schoolchildren illustrates this last point very well. Although their phones have the variety of functions outlined above, young people ignore most of them whilst using their phones to maintain and strengthen their social networks. In a study undertaken in an English secondary school, Taylor and Harper show that young peoples' lives revolve around mobile 'phones and a highly developed sub-culture exists that shapes the way they behave and interact (Taylor & Harper, 2003). Mobile 'phones are not just used for chatting or even texting but other meanings have emerged. Sharing mobile 'phones helped to consolidate friendships and relationships of trust. Showing messages displayed to friends nearby provided topics for conversation. The 'phone was also be used to demonstrate rivalry and power by teasing boyfriends/girlfriends or by hanging up on calls.

Taylor and Harper argue that young people use text messages and mobile 'phones as forms of gifts which have special meanings (Taylor & Harper, 2003: 272-287). Gift giving was found to be ritualised in the ways in which messages were sent, for example, the regular 'goodnight' text messaging between boyfriends and girlfriends. When one of them sent a text at bedtime there was a moral obligation to reply otherwise the recipient would be criticised for being insensitive. They also found a code of conduct for using SMS or text messaging. Writing messages in capital letters or without punctuation marks was thought to be "horrible". Ending relationships via text was considered despicable and to use texting to ask someone out was thought cowardly. The

study also showed that voice messaging did not have the same appeal as text messages as these could not be shared or seen so easily.

Two final and very recent examples of mobile phone use by young people illustrate the way in which its multi-functionality has been used to shift meanings. The first is a disturbing development which derives from the photographic capability of some models which allows users to send instant pictures. "Happy slapping" is a youth craze in the UK in which groups of teenagers armed with camera phones slap or mug unsuspecting children or passers-by while capturing the attacks on 3G technology. They then transmit the pictures for the amusement of their friends. According to police, the fad began as a craze in the UK garage music scene before catching on in school playgrounds in London and is now a nationwide phenomenon. As the craze has spread out across the country, the attacks have become more violent and adults have suffered assaults ((Honigsbaum, 2005).

The second example is the displacement of a live group from the UK charts by music derived from a mobile phone ringtone. Crazy Frog, the ringtone concerned, has pushed the Speed of Sound by the popular group Coldplay to number 2 in the charts, The Crazy Frog ringtone, originally the idea of a 17 year old Swedish computer salesman imitating his friends' modpeds was promoted by the Jamster ringtone company using a blue frog cartoon character. A German dance act, Bass Bumpers, combined the ringtone with Axel F, the theme from the 1984 film Beverly Hills Cop. Sales of Crazy Frog have been helped by heavy television advertising, particularly on music and cable channels (Muir, 2005). Obviously the meaning of the mobile phone is still evolving.

Conclusion

This comparison of the changing meanings of the traditional and mobile telephones has sought to show that communications technologies are just as much cultural products as the texts and messages which they convey and that their meanings are equally open to interpretation and change. To become part of our culture, telephones had to be given meaning and that process involved symbolic work. Telephone companies constructed terminal equipment and networks with a particular image of telephone use in mind. Advertisers used this image to construct discourses which would persuade users to employ technologies for preferred purposes. More than 100 years later, the mobile phone showed the same broad features in the first phase of its development when companies focused their efforts on business users.

However, both forms of telephone were used to fulfil existing social functions and in so doing their meanings were changed as users read the technologies in the light of their own cultural experience. The traditional telephone acquired a mass market when those who had been marginal users shifted its meaning to include that of sociability. The mobile telephone changed its meaning in the same way but much more rapidly as its social base widened. Recent research on the use of the mobile by young people shows that the meaning of the mobile is still being changed and that this is not always

in a technologically more sophisticated direction. Telephone technologies of both types are used to sustain and invigorate social relations of all kinds – friendships as well as business transactions. Rather than being built into the hardware, the meanings of telephones and other communications technologies are shaped by everyday lives and routines at work, at home and, in the case of the mobile phone, almost anywhere else. This is important not only to the academic study of communications but also to the producers of communications technologies. The meanings which users read into technologies can play a significant role in informing their design and re-design. As we have seen, telephone users are not simply passive recipients of technology easily persuaded to follow preferred meanings. Rather, they play a key role in shaping its continuing evolution.

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