COMPUTERS IN THE HOME: DOMESTIC TECHNOLOGY AND THE PROCESS OF DOMESTICATION

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ABSTRACT

Home computers are often considered as 'domestic technology' or part of the 'domestic media ensemble' as if those were simple and straightforward concepts. In this paper, we investigate the notions of domesticity and domestication and explore the processes of integration of the home computer into the domestic sphere. This paper starts with an exploration of the concept of domesticity. It then analyses how a family builds an image of the computer as a domestic or undomestic object. This analysis is based on a series of interviews with seven British families in the late 1990's. This analysis is used to identify some of the characteristics that contribute to make the home computer domestic or undomestic, and to explore the processes of domestication.

1.   INTRODUCTION

In order to understand the computer within a context of home life, the family and family relationships, it is necessary to understand the social and physical environment of home life. We refer to this here as the domestic sphere, and use the phrase to designate what is most commonly referred to as 'the home', but with an emphasis on the extended social and emotional characteristics of the home environment, rather than its purely physical and functional features. In doing this we parallel the equivalent (if often unstated or implied) account of information technology in a world beyond the home, a (masculine) world of work, organisations and the market, bound together in a managerialist and rational narrative of technology as means to ends. This research is inscribed within the tradition of social construction of technology, whereby technology is seen not as technically determined but as developed and shaped through and by social processes (Bijker and Law, 1992; MacKenzie, 1996; MacKenzie and Wajcman, 1999; Pinch and Bijker, 1989). As Dalbohm and Mathiassen (1996) point out, "Technology is what its users perceive it to be" (page 904).

The domestic sphere is a multigenerational world where people seek security, intimacy, support and protection. The domestic is often seen as a sanctuary not only for family life, but for all the values associated with civilisation. The image of a sphere is intended to accentuate some of these emotional connotations by emphasising the ideas of harmony, comfort and security. However, we wish to stress that we do not endorse the simple belief that the ideal outcome of family life is the achievement of domestic harmony, or even that there is such a thing as domestic harmony. Rather, we recognise that conflict is an inherent part of domestic life and of family experiences, and that an understanding of family life with computers needs to acknowledge the existence of conflicts, divergent interests and varied concerns.

The research reported in this paper is based on a set of extended interviews undertaken with seven families living in the South of England in the period between 1996 and 1998. This research began as an investigation around the question 'What do families do with home computers?' but quite quickly developed into a broader investigation into how the computer found a place within the domestic sphere, and how it was appropriated by family members. In this the study developed a parallel interest to much of the social shaping of technology literature, with its concern with how particular technologies find a place in the world. The seven families studied were in many ways very different, although they all had children, and the narratives of the computer were similarly diverse. The empirical phase of the research included visiting these families at home, discussing various topics related (or not) to the computer and observing the interpersonal relationships on display. Both the current use of the home computer and the longitudinal aspects of computer use were addressed in these interviews. The research was undertaken using an ethnographic approach, allowing extended and discursive conversations with family members, alone and as a group. All the families had computers and in each case they were to some degree used for a variety of work, leisure and other tasks. Throughout the research we attempted to give a voice to family members as they expressed their attitudes to their home computers. The research thus allowed us to draw a series of family portraits, including transcribed extracts of interviews, and thus to develop ethnographic reflections on the information gathered through those interviews.

The structure of this paper is as follows. Section 2 is concerned with exploring the meaning or meanings of the term 'domestic', in particular in relation with the notion of work, and some of its implications in terms of feminist ideology. An overview of the empirical work carried out with the seven families under study is provided in section 3. Section 4 describes the themes of domestication that emerged from the analysis phase of the research, while section 5 briefly concludes this paper.

2. THE NOTION OF THE DOMESTIC

The concept of 'the domestic' at first sight perhaps conveys ideas of peace, caring and respect, not only as an intrinsic part of family life, but also as a natural and almost instinctive feature of human life (Hareven 1991; Ryan, 1996). From that perspective, the home is 'naturally' a haven of intimacy and security and the ideal environment for the expression of human qualities and family values. The word domestic has thus evolved into evoking feelings such as closeness, warmth and affection, and thus the use of expressions such as 'domestic violence' or 'domestic abuse' spawn intense feelings of shock and outrage. Similarly, when we talk about domestic animals, the word evokes notions of loyalty and attachment as well as docility and gentleness. And we can see that, more generally, the verb 'domesticate' is used, not only in reference to animals, but also to humans or groups of humans. 'Domesticating' a person often involves the idea of disciplining them, taming them or bringing them closer to a particular idea of civilisation. Whether the word 'domesticating' is used in connection to human, animals or even objects or ideas, it generally means making something fit for life in the home or to participate in a particular type of society. It conveys the notion that an effort is made to turn something that is part of the world of wilderness into an acceptable member or accessory of life in sanctuary that is the home. This effort usually involves removing the violent or aggressive elements of behaviour and replacing them with a milder and tamer, co-operative attitude or appearance.

The word 'domestic' has not only emotional but also practical connotations, for example when it is used in connection with the idea of 'work'. When associated with the notion of work, the word 'domestic' often

conjures up the image of gender division of labour as well as notions of patriarchy and oppression of women. Domestic work typically refers to 'homemaking' activities, which range from general childcare to household maintenance' tasks such as washing and dusting, or to more 'productive' tasks such as cooking, and dressmaking. Such activities require a fair amount of knowledge and experience and it is often expected that such knowledge will be transmitted primarily via female members of the family, or through dedicated courses such as the late 'domestic studies' programmes in schools, targeted at future homemakers. Some of these 'domestic tasks' have been the focus of technological endeavours aimed either at reducing the amount of efforts required to fulfil the task or at increasing its 'efficiency'. Domestic technologies were initially expected to translate into a radical transformation of domestic labour (Toffler, 1980). However, other research suggests that although domestic technology has raised the productivity of housework, it is accompanied by a rise in overall expectations (Jackson, 1992), principally in terms of cleanliness standards (Cowan, 1983, 1985), which leaves the domestic worker little better off.

When domesticity is discussed in the literature, it is often in conjunction with its effect on women, either in its oppressive role or in its role as a potential tool toward women's liberation. Domestic work has long been seen as an essentially feminine task, and for many, as the essence of femininity. In particular, managing the domestic was typically considered women's contribution to the household's economy. Such a responsibility could translate either in performing those tasks themselves or with other female members of the family or in overseeing the work of the 'domestics' (who were themselves largely female).

In contemporary literature the oppressive characteristics of domestic work have been outlined both regarding the situation of domestic workers and the position of housewives (Glenn, 1980; Creese, 1988). Industrialisation has been often seen as bringing about major changes in women's economic role and social status in and outside the home (Matthaei, 1982; Kessler-Harris, 1982; Boydston, 1990; Hareven, 1991; Tilly, 1994; Davidoff *et al.*, 1995). Authors such as Easton (1976) and Hareven (1991) have contrasted the prominent economic role of women in pre-industrial times with their retreat towards domesticity and consequent loss of social status during and after the industrial revolution. In their analysis, the move from farming villages to industrialising towns and suburbia had a direct effect on the redistribution of economic roles within the household and the confinement of women within the home, thereby redefining and narrowing both their role within the family and their social status.

It has thus been argued (Davidoff and Hall, 1987; Ellis, 1975; Easton, 1976) that the development of an idealised image of the domestic was closely linked to the spread of industrialisation. Because the public world of business evoked images of immorality and misery, the private world of the home came to be understood as a shelter for security and moral values (Clark, 1976; Zaretsky, 1976). This 'cult of domesticity' has been widely criticised for creating and developing an oppressive set of structures in accordance with patriarchal traditions (Dill, 1988; Jorgensen-Earp, 1990; Rose, 1991), and the geographical confinement of women within the home had often been viewed as symbolic of their social devaluation. Because the home had become a place considered peripheral to the happenings of the world, equating the world of women with the domestic world meant putting them in a subservient position, subordinated to their husband's authority (Zerilli, 1982). The accent has been put on the coercive and constraining features of the 'cult of domesticity' as well as the restriction of opportunities it brings about (Allan, 1985).

However, a number of scholars have criticised the superficiality of some of the critiques of the 'cult of domesticity'. Firstly, the image of a universal 'cult of domesticity' overlooks the existence of differences in ethnic background (Geschwender, 1992a, 1992b), social milieu or geographical circumstances. Secondly, the existence of a 'cult of domesticity' may not have had only negative consequences on the destiny of women. For example, Tuchman (1981) argues that, because it portrays women as moral forces that triumph over poverty and greed, the 'cult of domesticity' may have increased women's confidence in their ability to make changes. This, in turn may have driven them into the public sphere where they initiated social movements such as moral reform and women's rights. Muncy (1991) also describes the US progressive reform movement as having been initiated by women who were working within the boundaries set by the 'cult of domesticity' and Victorian ideals of self-sacrifice.

3. FAMILY USE OF HOME COMPUTERS: AN EMPIRICAL INVESTIGATION

Against this background our study set out to explore and to develop insights into how the home computer carves its place within the domestic sphere as a functional item, as a representative of a world beyond the family, and as part of the intricate web of symbols and actions that constitute family life. Throughout the interviews carried out for this research, and their analysis, we focused on processes; how the computer's integration as a domestic object occurs or fails to occur, how families devise means and strategies to tame and domesticate it. In this section we review a number of key concepts that emerged from our research. We first give an overview of the process of integration of the home computer as technology. We then examine various symbolisms associated with the home computer, in particular as an embodiment of the world of work. In contrast, we also explore how home computers may come to be considered and manipulated as 'magical' objects.

One way to see the computer is an object that takes its place in the domestic sphere (and domestic space) alongside other technologies, and its presence in particular parts of the home may be seen as changing, deteriorating or improving the domestic landscape. In our families, the home computer was often seen as a representative element of a broader range of goods or objects that are themselves charged with symbolic properties. Similarly, Moores (1993), Haddon and Silverstone (1993), and Silverstone and Hirsch (1992) suggest that the home computer is part of a whole 'domestic media ensemble.' In some instances, this leads to the home computer being seen as a mere 'piece of electronics' that belongs to the world of gadgets and other frivolous objects or appliances. One of the interviewees explains her lack of interest for computers in a very telling way:

> I don't like playing with gadgets basically.

In a broader sense, and beyond the 'media ensemble', or the 'electronics ensemble', the home computer was also sometimes seen as just another consumer good, especially by those family members who did not attribute particularly positive qualities to it.

> [My husband] just wants one [a new home computer]. Like you'd like a better car or…

We also saw the home computer represented in other terms, as a symbol of the world of work and conjuring up images of 'corporate culture' invading the domestic space, quite literally bringing work home, which sometimes result in some family members developing ambivalent attitudes. The home computer was also seen as symbolising the 'cold' and impersonal aspects of technology. In particular, the computer was seen as an inferior mode of communication when compared with other means such as the telephone. One of the respondents contrasts the appropriateness of e-mail in particular situations such as "a quick message" with the unsuitability of such a medium for more private or intimate types of communication.

> You can't really say much on e-mail. For example, Richard and Barbra [son and girlfriend] e-mailed each other for a little while and they seemed to only say things that caused upset for the two of them. And now they never do, ever… as far as I know… I haven't seen any e-mail from Barbra for a long time. He does e-mail all his other friends but not Barbra. It's a bit impersonal isn't it? I think it's good for a quick message.

The cold, impersonal, corporate aspects of the computer could, at first sight, give the impression that it is a doubtful candidate for the process of domestication. And yet, even for these people it appears to be used, included, and eventually accepted and integrated into the domestic sphere, often by those very persons who are most ready to stress its weaknesses and inadequacies – those who most see the need for a process of domestication. Many of the respondents were very aware of the alien character of the home computer but they nevertheless use it, accept it and incorporate it into their routines and habits. But we do not see any contradiction here. On the contrary, we would suggest that, for some respondents, it is precisely this developed awareness of the home computer's weaknesses and 'unpredictabilities' that makes it eventually acceptable, understandable, and 'domesticatable'.

We found that respondents tended to attribute various qualities or properties to the home computer. Our research revealed the existence of a variety of beliefs regarding the role or the intrinsic qualities of the computer, ranging from the transformative properties of computers to the threat they may pose to their users, their immediate environment or even society as a whole.

Ehsan, a teenager who worked part-time in order to acquire a computer for his younger brothers and himself, relates an addiction story whereby one of his brothers became so engrossed in computer games that he started neglecting his religious duties, which triggered a major conflict within the family and motivated Ehsan permanently to put the computer away.

> Ehsan: My mum […] didn't initially mind. But at some point, Tamim [my brother] started to get so much hooked on it he wasn't going to prayer any more. That's when she threatened to chuck it out of the window. […] You're supposed to go to the mosque three times a day. […] My father, Nasif and I, we went every day of the week, two to three times. And sometimes Tamim did not, so it caused a lot of tension. The thing is… when you play a game, you don't really get into it before, say, twenty minutes, half an hour and then it was too much of a distraction to stop the game and go to the Mosque... [Tamim] was spending his whole time on it [the computer]. …it was taking over our lives.

It may be noted, although this is a rather judgmental statement, that a number of the fears and anxieties that surround the home computer, although they are grounded in reality, may easily turn into irrational beliefs. The computer is thus seen as able to incapacitate its users, to take control over their mind, to turn them into different persons. The power of the computer is then seen as a force of destruction, playing tricks on the mind of individual users, thereby bringing turmoil within the house, and ultimately the disintegration of the family as an institution. One of the respondents, Duncan, shares his fears:

> We have a friend whose son is partially deaf. He always draws the same picture. He's been allowed to spend too much time on the computer if you ask me. [...] He can get very angry. He's in that world of his. He's not in touch with other people's feelings. That, I think, is the result of both the computer and the hearing problem. […] He's got a computer since he was five.

Such beliefs may be interpreted in a number of ways, but our data suggests that a sense of magic is an essential component of family experiences around the home computer. In many instances, families and family members confer a mystical dimension to the computer and to computer use. A computer is without doubt an intriguing object. It can perform a wide variety of tasks but does so with a very particular and sometimes baffling logic. It appears robust and powerful but is vulnerable to the effects of outside elements such as water or dust or the equally mysterious effects of viruses. All these elements contribute to increasing the computer's opacity and may reinforce beliefs in its mysterious and mystical properties. In our families we saw such beliefs translate either into excitement and enthusiasm towards technology or into various degrees of negativity, ranging from scepticism to fear and avoidance.

Some of our respondents exhibited an evident belief or faith in the magical properties of the home computer, and had their own idealised interpretation of what the computer can or will do. A 13-year old respondent imagines that owning a modem will magically take care of his class work assignments:

> I wouldn't mind a modem. Some of my classmates do their homework with stuff from the Internet. It's much easier… better information… A link leads to another, then to another, then… Before you know it, you've got your essay, I mean… all your information, you just download it and… that's it…it's all there… you just have to write it up.

The magical properties of the home computer appears under a different guise for Bernard, a father of two girls, who displays a largely positive attitude towards the home computer. He emphasises the role of the home computer as an educational tool and as a gateway towards his daughters' personal development. He expresses the desire not only to get in touch with the magic of the computer but also and most importantly to

put those magical qualities at the service of his family. His efforts towards championing the use of the computer at home reveal his wish to capture and release its mysterious but (in his eyes) tremendous power. The miraculous outcomes of home computer ownership will translate into a matchless education and ultimately a secure academic and professional future for his daughters, thereby guaranteeing them a freedom regarding which path to choose in their future life.

> Bernard: I expected it would be difficult for them [my daughters] if they didn't have one [a computer]. I think it's important for them, I mean, in this day and age… I want them to have the best education possible. Then… then, they can choose what they do with it. But when you don't have an education, you have no choice… I had no choice… There are opportunities out there but you have to give yourself the chance to… to pick them up. And for that you need an education… and direction. […] And the computer… the computer facilitates that. It won't do the work for you but it will facilitate it… it will make it easier, or more fun, or… It's a tool. But, in this day and age, I think it's a necessary tool.
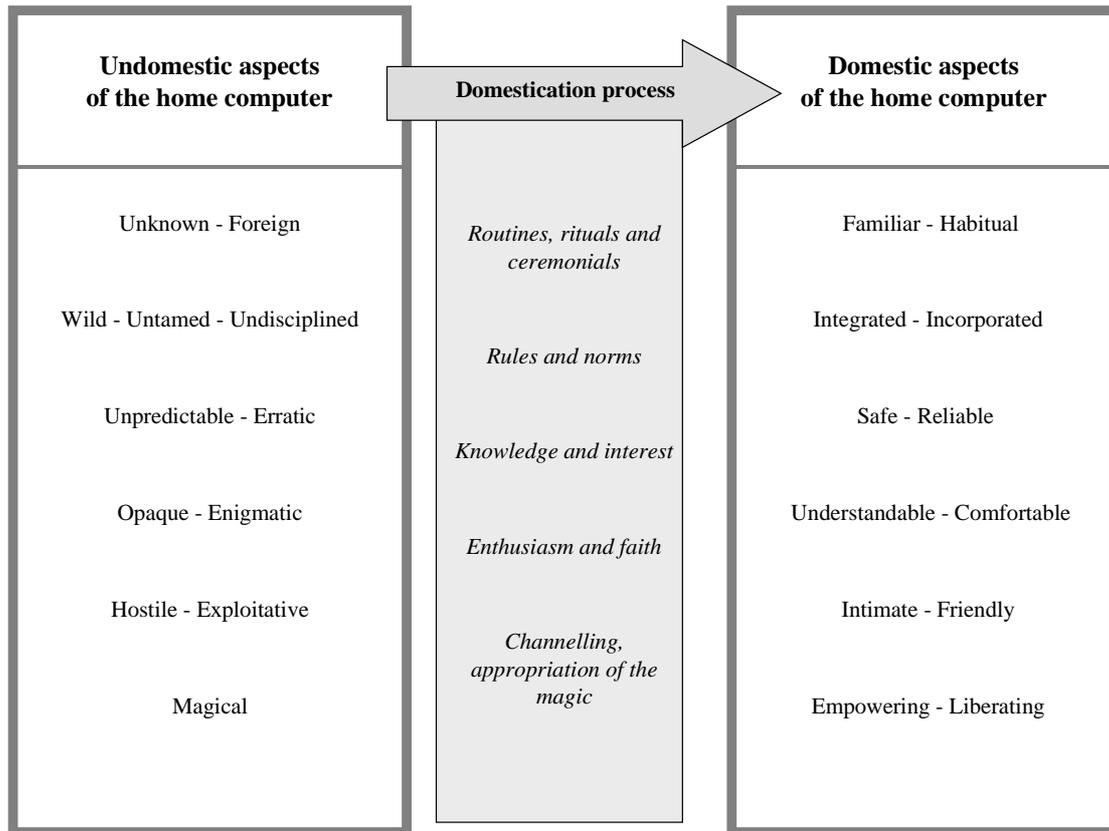
Another fear concerning the quasi-magical powers of computers resides in the beliefs that they may possess or acquire human characteristics. The literature offers many interpretations of such a phenomenon. Seeing the computer as possessing human characteristics has been seen as an expression of one's affinity or even intimacy with the computer (Turkle, 1984) and such affinity has been presented as one of the dangers associated with spending too much time with the computer. It must be noted, however, that such anxieties did not find a lot of resonance in the analysis of the case studies in our study: we only encountered a few instances of anthropomorphisation of the computer throughout the interviews - one of the adult respondents referred to her computer as a companion, "a good friend".

4. FROM DOMESTICITY TO DOMESTICATION

This research started as an investigation of the place of the computer in the family. Increasingly though, the status of the home computer as a domestic or undomestic object emerged as a significant element in the research. Thus a significant contribution of this research is the understanding it allows of the notions of domestic and undomestic, and of the process of domestication. Here we summarise what we have learnt about the domestic, the undomestic and the domestication process through our research.

At the outset, it might be suggested that those three concepts are 'second-order concepts', the researcher's construction of the respondents' constructions (Geertz, 1971; Walsham, 1993). Indeed, it must be acknowledged that respondents do not use those words at any point in the interviews- although this was somewhat predictable, since the word 'domestic', and *a fortiori*, the words 'undomestic' and 'domestication' are rarely used in everyday conversation. We feel, however, that talking about the researcher's 'construction' in this context is perhaps slightly misleading - although the words are not pronounced in the interviews, the concepts and the conceptions are undoubtedly there. Through many of the conversations we undertook in the research, people are talking about the extent to which the computer is taken up and integrated into their domestic life and they talk as much about this aspect as they do about its functional potential (indeed more so). More generally, we saw a recurring theme expressed of the acceptability (or otherwise) of the computer within their home and as part of their family lives. At this point we choose to re-work our insights and their inter-connection within a perspective that emphasises what makes this technology domestic and the processes of domestication.

Figure 1 provides an overview of the main themes that we discovered in our analysis of the domestication process. It lists some of the principal elements that contribute to making the home computer either domestic or undomestic and depicts aspects of the process of domestication found in this research.

Undomestic aspects of the home computer	Domestication process	Domestic aspects of the home computer
Unknown - Foreign	*Routines, rituals and ceremonials*	Familiar - Habitual
Wild - Untamed - Undisciplined	*Rules and norms*	Integrated - Incorporated
Unpredictable - Erratic	*Knowledge and interest*	Safe - Reliable
Opaque - Enigmatic	*Enthusiasm and faith*	Understandable - Comfortable
Hostile - Exploitative	*Channelling, appropriation of the magic*	Intimate - Friendly
Magical		Empowering - Liberating

Figure 1: *Summarising the process of domestication*

In trying to uncover what might render the computer domestic or undomestic, we first refer to the ideas presented at the beginning of this paper. We have seen that the 'domestic sphere' evokes images of the domestic as a sheltered and feminine place of intimacy and care, a warm cocoon where the individual takes refuge from the hardness of the outside, unmerciful world. But we also realised that the notion of domestic goes beyond the realm of this narrow sense as domesticity. People embrace computer technology as domestic not only if it is safe, but also because they believe it can help them pursue their (domestic and social) purposes and achieve their goals. And, conversely, computer technology remains undomestic not only because it 'fails' to provide safety and comfort, but also because it is imbued with symbols and meanings that are felt to be alien or unacceptable.

In an effort to analyse how families integrate computer technology into the home and conceive of it as domestic or undomestic, we uncovered a number of processes that may contribute to turning the home computer from an undomestic to a more domestic state. We thus witnessed a process of domestication that involves, as suggested in Silverstone and Haddon (1996), "quite literally a taming of the wild and a cultivation of the tame" (page 60).

First, we observed that families and family members engage in rituals and ceremonials, as well as more routine practices, in order to make computer technology less threatening, more habitual and familiar. Through the enactment and repetition of such practices families create rules and norms that shape (and are shaped by) the way they conceive of computer technology and relate to it. One of the respondents, for example, established a routine according to which he took responsibility to check his wife's diskettes for viruses before she may use them on the home computer. Another domesticating routine found in the case studies consisted of moving the home computer out of the study at a given time and for a given period, to enable non-computer-related activities to take place. Other events, which can be characterised as rituals or ceremonials, contributed to making the technology more domestic or familiar. For example, in one of the

case studies, the whole family went out 'as a family' to shop for a home computer, regardless of the fact that the computer was to be used almost exclusively by one family member.

We also saw that increased knowledge (often associated with an interest in the technology) contributes to making the initially alien and opaque workings of computers more understandable, and thus more familiar and acceptable. In a number of the families an extended network of friends and relations provided skills and advice, including brothers-in-law and ex-husbands. We see these extended networks as an expression of a wider concern to reinforce domestication process, and it is significant that almost all our respondents felt that these social contacts would be more suitable for advice than computer vendors.

In a similar way, another element that emerged from our analysis is how individual or group enthusiasm and faith in the potential of computer technology can also be seen as being part of the process of domestication (or the motivation to try to domesticate), since it contributes to turning the undomestic computer technology into perceived means of empowerment. In our families we saw different individuals with different perceptions and interpretations of what is threatening about computers and what is not. For some, the uncomfortable or intimidating aspect of the computer resides in the perception that it comes from the world of work, and indeed for some this was quite explicitly an issue, as in the cases of a nurse and a teacher, both of whom had had bad experience of computers at work. For others, these threatening characteristics were embodied in the ethical challenges posed by having a 'window into the outside world' located within the domestic sphere. Others were concerned with the unpredictability of the workings of the computer itself, which may break down at the most unexpected moment.

Some of our respondents clearly believed that the home computer is an empowering tool and embrace this notion and display the firm belief that their home computer will empower them and, perhaps more importantly, their children. But others do not seem to relate to the computer as an empowerment tool, at least not in the same terms. Some of the respondents had a way of patronising it, downplaying it, or emphasising its failings or awkward and cumbersome aspects when reporting that they do use it ("it's a useful thing, but…"). In being dismissive and studiedly casual about it, they make sure that their point is put across, that they will not let it dominate their lives. The notion of empowerment may seem to find little resonance in the accounts of such respondents. And, yet, when one examines carefully the situation, the idea of power is very much present in their accounts. They may not feel that they draw power from the computer to achieve higher goals in their lives, but through their dismissiveness of the computer, they are building power over the computer itself and over individuals around them who are weaker to the charms of the computer and let themselves be drawn into its circle.

We have seen in the previous section that some individuals try to channel the perceived magical properties of the computer to achieve their goals. Here, we have an example of the fluidity of the concepts of domestic and domestication. Some respondents try to 'break down' the magic to render the computer a more common, 'everyday' object, with no mystery, and thus acceptable in a domestic world where there are few secrets. Others use those magical properties to reinforce their status within the domestic sphere and carefully preserve the enigmatic, mysterious and powerful image of computer technology. In both cases, we argue, we are in the presence of a process of domestication. Whether the magical properties of the home computer are exposed, explained and put at the service of the whole family, or if one particular member of the family takes on (we might even say is given) this mediating role, they equally can be seen as part of a process that serves to make the computer more domestic and to carve it a place within the domestic sphere.

5.   CONCLUDING COMMENTS

The accounts from our interviews show vividly that domestication is a complex process. We see that what is acceptable, tolerable or desirable to one person or one family would be totally unacceptable to another and because people conceive of the domestic or the undomestic in a multitude of ways, they engage (or not) in the process of domestication of computers in as many different ways. The idea of the domestic as a 'local' or situated concept is thus central to this research and our interviews with families gave us an insight into an intimate, private world, where notions of what is deemed domestic or undomestic are surprisingly different.

Hence the analysis presented in this paper is not intended to provide any single definitive model of how computers enter the domestic sphere. However, we believe that this analysis helps us further our understanding of computer technologies as situated and interpretively flexible.

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