La Trobe University
Online Media Program

Research Report No. 2

Getting Connected: Gender and the future of online services in the home

Sue Turnbull

December 1996

La Trobe University Online Media Program

The primary aim of the La Trobe University Online Media Program is to undertake social and policy research into the development of online media services. The Research Program has three research streams. They are:

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Organisational, regulatory and technological change is occurring at such a rapid pace that it is difficult decide on the outcome of change. Service providers are as uncertain as potential users about the viability or usefulness of new services. This stream of research examines the role of the new media in people's lives.

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For additional details contact Associate Professor Peter B. White, Director, La Trobe University Online Media Program, Department of Media Studies, School of Arts and Media, La Trobe University, Bundoora, Victoria 3083, Australia. Phone +61 3 9479 2785 Fax +61 3 9479 3638 Email:pbwhite@latrobe.edu.au http://teloz.latrobe.edu.au/teloz/

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About the Author

Sue Turnbull teaches Media Studies at La Trobe University. Her Ph.D research (*The Media and Moral Identity: Accounting for Media Practices in the Lives of Young Women, La Trobe 1992))*involved a year long ethnographic study of media use by 22 young women. She is co-editor with Kate Bowles of *Tomorrow Never Knows: Soap on Australian Television* (AFI 1995) and is currently working on a soap opera text-book for Polity Press and a study of women reading and writing crime fiction (*Fatal Fascinations)*. Her essay, “Dying Beautifully: Crime, Aesthetics and the Media” (*Australian Journal of Communication* , 22:1, 1995) was awarded the 1995 Henry Mayer Prize. She is on the editorial board of *Continuum:* and *Beyond the Divide* and is co-editing special editions of *Media International Australia* (on the presentation of sex in the media) and *Continuum* (Australian comedy). In 1996 she was elected Vice-President of the Australian and New Zealand Communication Association, and in 1997 will be President of this Association.

Executive Summary

This paper explores the future of new media technologies in the home by looking both backwards and forwards in order to ask what the history of technology, its design and usage, can tell us about the future. The paper discusses how such futures are already imagined in the popular culture and media to which people already have access, and what such representations might reveal about commonly felt hopes, anxieties and fears. The question of moral panics and the subsequent moral crusades which they provoke is addressed. The case study of one family living in outer Melbourne is then presented as a way of contextualising theories about the possible role of new technologies in the home, and in order to demonstrate how one particular family negotiates the use of the technology to which they have access, including a fax and computer. What is revealed is the importance of boundary maintenance to the family in the home; the collapse of the distinction between public and private spaces related to work and home; and the ways in which technology usage is affected by all sorts of social, moral and aesthetic dimensions. Central to the argument is the role of gender in the design and implementation of technology, and as a key factor determining access and usage. Even so, the essentialising tendencies of both masculinist and feminist claims about technology are resisted in favour of a more radically contextualist understanding of how people might use technology for all manner of purposes, regardless of the gender specific design or imagined functions of the technology in question. The study reveals that the precise nature of anxiety about new media technology in the home may be quite hard to express and define; and suggests that further research is required in order to determine the basis and validity of such anxieties and resistance.

Getting Connected:
Gender and the future of online services in the home

What is the future for new media and communications technologies in the home? In order to construct a possible future, it would seem appropriate to look both backwards and forwards from a position in the present. Histories provide us with numerous case studies which reveal the socially constructed development and use of technologies, allowing us to make some predictions about possible futures. Such futures are also regularly projected for us in magazines, books, and films. This is not to suggest that people will use such projections as models for their own behaviour, but that popular culture may well express some of the anxieties, hopes and dreams which people already have about the future role of technology in their lives. This paper therefore begins with such a vision of the future (as imagined in a popular film), before looking at the past in terms of the history of technology in relation to the study of a family in the present. This study raises a number of critical questions about the potential role of new media technologies in the home; in particular, what are the social determinants (including gender) which might affect their use.

Imagining Technology

Since many people do not have direct experience of new media technologies such as online services to the home, how these are imagined may well depend on their representation in those media to which people already have access[1]. In the case of computers and online services to the home, there have been frequent references to these in the quality and popular press, magazines and journals, on radio, and in films and video. One recent example would include the movie *The Net* (directed and produced by Irwin Winkler) which was released to video outlets in Melbourne on 13 March 1996. This video has since proved to be enormously popular with thousands of borrowers representing different ages and social groups.[2] Why should this be so?

The film stars Sandra Bullock as Angela Bennet, a female computer whizz whose expertise involves getting the bugs out of the commercial programs delivered to her by the software company, Cathedral, which employs her as a consultant. She lives alone, orders pizza by computer, her social life apparently limited to conversations about ideal male partners with members of her regular online chat group. When she discovers a political conspiracy involving a virus which will effectively disrupt the communication networks of all major instutions in the US thereby enabling a political coup, her life is in danger. Cyber-terrorists want to kill her because of the knowledge she now has. Their first step is to erase her true identity, providing her with the false identity of a known criminal. This is easily achieved by the manipulation of the computerised data banks in which information about Angela Bennet is lodged: as she explains to her legal aide, `Our whole lives are in the computer'. Angela thus becomes a fugitive from the law with no credibility and no way of warning the government about the impending threat. Except, of course, she does find a way (through a combination of guts and computer know how); the plot and its perpetrators are exposed and Angela saves the day as a true hero should. The film is thrilling, pacey and ultimately satisfying in conventional narrative terms. But how does it represent the technology which provides the rationale for the plot?

As an example of popular culture, *The Net*, re-frames some of the key themes and issues which emerge in many debates about the potential of new technologies for good and evil. For

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[1] The portrayal of new technologies in films, particularly science fiction films, has already become established as a specific area of study for film scholars. Claudia Springer's recent publication *Eelectronic Eros* being an example of a psychoanalytic approach to the gendered portrayal of technological bodies in such films as *Lawnmower Man* or *Terminator 2.*

[2] Personal interview with manager, Eltham Video Library, August 8, 1996.

a start, there is the gender of the hero and her relationship to computer technology. While it would seem to be an innovative and laudable move to write a movie about a female hero who also happens to be a highly skilled computer operative, Angela's expertise at the computer apparently comes at the expense of other forms of sociability. Angela thus embodies all those anxieties about the ways in which `abnormal' relationships with technology may substitute for, or supplant, `normal' social relationships with others. The film also taps into a number of amorphous anxieties about the surveillance power of new media technologies, and the ways in which these may affect our lives in negative ways. Even if we know that it is a human being (the villain) who has entered the data banks and erased B's identity, there is a sense in which this malevolent act is ascribed to the technology rather than the technician. In this way, *The Net* becomes a potent dramatisation of our fears about the impact of new communication technologies on the self, and on the social and political order in which that self is embedded. Alienation and chaos are shown to lurk just beneath the user friendly interface of the computer in the home. Why should this be?

In order to answer this question, I will consider the nature of popular anxieties about new media technologies, particularly in relation to the home and everyday life, before returning to the issue of gender in order to ask the following: in what ways has technology been gendered and how does such gendering relate to its appropriation and consumption in the private and social space of the home? This latter question I shall address by describing the media and technology usage of the Browns, a family living in suburban Melbourne.

Technology and Moral Panics

In *Nattering on the Net*, Dale Spender (1995) draws an analogy between the introduction of the printing press and that of the personal computer. Both technologies, she argues, were (and are) embraced and feared because of the social consequences they have (and will) produce. Spender's point is a good one: utopian and dystopian visions have characterised the introduction of each new technology. This is illustrated by her own apparent ambivalence about computers. While Spender spends an extensive amount of time recounting the horrors of women being stalked or sexually harassed on the Internet, she also waxes lyrical about a vision of classrooms without walls in which highly motivated (and privileged) students access unlimited information and power by means of their (very expensive) laptop computers. Spender's solution is therefore deceptively simple. Women must take control of technology, seize possesssion of cyberspace, and use computers for their own (unproblematically) laudable ends.

Leaving aside for the moment the gendered nature of Spender's anxiety, Roger Silverstone would locate such anxiety in a much broader context. Everyday life, he argues, is a continuous achievement because:

> In the modern world the threats of chaos and our ability to defend against them are, it is often argued, magnified by industrial and technological changes (Silverstone 1994: 2).

Change, particularly industrial and technological change, may therefore be productive of anxiety whatever form it takes. This is the bottom line. We fear what we do not know, even if we are excited about its possibilities. As a consequence, we are susceptible to other people's accounts, or visions, of new technologies before we ourselves come to grips with them; and it is of such susceptibilities that moral panics are made.

In a discussion of moral panics and their social origins, Goode and Ben-Yehuda make the point that, as a rule, moral panics express a fear which is completely out of proportion to the threat (1994: 11). Moral panics, they argue, usually have little basis in empirical facts, but arise because a particular incident or story captures the popular imagination and gives rise to disporportionate reactions. Once a moral panic has begun, it may then be seized upon by opportunistic moral crusaders who use the momentum of concern to their own ends, usually involving a claim for increased social control through legislation (Goode and Ben-Yehuda 1994: 143).

If we accept the arguments above, then it is not hard to see a particular pattern emerging: popular anxieties are produced by the possibility of industrial and technological change and may turn into moral panics leading to moral crusades and legislation. In this way, any new form of technology affords an opportunity for the creation of a moral panic and consequent legislation, even before its potential for good or evil has been realised by its intended consumers.

Moral panics about new media technologies would appear to have followed these predictable moves. For example, before television was introduced into Australia in 1956, anxieties about the negative social effects of the new medium were debated, and legislation to control it proposed by politicians and lobby groups claiming to represent the interests of the church, Australian culture, education and women (Curthoys 1991: 160). Similarly, even before many homes in Australia have access to online Internet services, anxiety has already been expressed about the negative effects of such services on the family (particularly children) in terms of the introduction of unwanted images and information into the home. In this latter instance, a vague anxiety about the potential of a new media technology to bring about social change is seized upon by political interests in order to effect forms of legislation which, in this latter case, include censorship of the Internet.[3] The common factor which makes the introduction of these two technologies (television and computerised online services) comparable is their intended site of reception, the home. What is it about the home which makes it such a contested and political site for the consumption of technology?

Everyday Elusiveness

How we construct our concept of `home' is inevitably linked to our experiences of family and everyday life. While such experiences may be commonplace, they are by no means uncomplicated. Attempts to theorise the everyday and that nexus of social relations we call family have proved to be fraught with difficulty even though everyone at some time has had some experience of home and family upon which they might draw. In general, it would seem easier to classify different domestic arrangements according to such `measurable' factors as geographical location, economic structure and composition. Families may be located in the inner or outer suburbs or in remote rural districts: they may be wealthy or poor by national standards: they may be nuclear, extended, blended, single parent, gay, or a congregation of people who simply assume their status as a family for strategic purposes. While it may be easy to describe families thus, it is much harder to find out how they operate as a social group. As Bausinger makes clear (1984) it may be nigh impossible for an observer to fully understand the subtlety of family interactions about a media technology such as television unless they have participated in the innumerable encounters which have gone before. Each family has its own unique history which contributes to the possibility that the same piece of technology may be appropriated by apparently similar families (as indicated by empirical measures) in quite diverse ways.

The ethnographic studies of Bryce (1984), Lull (1990) and Morley (1986, 1992) have proved this to be true in the case of television: these studies have demonstrated how this technology is domesticated by different families in ways which reflect, and are inflected, by their general patterns of interaction, time management and gendered relations. What is of most interest in these studies is the often unstated role in which television is cast by the individual families. How the family envisages the technology would seem to be of vital importance in determining how it is consumed, and by whom. In this way, while the information-bearing, educational role

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[3] On July 5 1996, The Australian Broadcasting Authority released an "Investigation into the Content of On-line services" (Report to the Minister for Communications and the Arts, Sydney, June 1996), one week before the Standing Committee of Attorney's General was due to meet. While the agenda of this group was to have been the consideration of a proposed national uniform legislation, putting in place criminal offense provisions for the storage and transmission of offensive material on the Internet (in other words, censorship); the ABA advocated that Internet service providers and other industry bodies develop their own self regulatory practices and codes of conduct (*Communications Update*: 24: August 1996, 14-15).

of television is generally regarded with approval; the entertainment role of television is frequently regarded with disapproval or even guilt.

There may be complex reasons for television being viewed differently depending on its perceived role. For a start, there is no doubt that information (news, current affairs and documentary) have a much higher status than popular forms of entertainment (quiz shows, soap operas, comedy). It should therefore come as no surprise that people are much happier to talk about their high status media activities than to admit to their low status pleasures; probably because they anticipate a moral judgement will be made about them on the basis of their expressed media preferences. An additional complicating factor here is the gendered nature of such preferences. As Morley reveals in his study (1986), men claim to have a greater investment in their high status programs (which may indeed be an historical and social reason why such programs are of higher status in the first place) than women.

The technologies of television and video are similar in that both are currently envisaged as media forms which deliver sound and images to the home. The issue which then emerges is the perceived need to control and monitor what is to be received. In other words the private social space of the home is constructed as an enclave to be protected from the outside world which may enter as a consequence of the media delivered by technology. Families may therefore become concerned with establishing their own moral, social and cultural boundaries: but those boundaries may differ. Some families may see little need for strong boundary maintenance while others seek to establish explicit rules about the consumption of media technologies in the home: some families encourage ‘bringing the world back home’ while others want to keep it at bay, or at least those aspects of the world which they don’t like.[4]

Going public in private?

At this point, it is important to consider in more detail the relationship between the private space of the home and how this has been differentiated from the sphere of the public. Silverstone (1994) argues that the construction of the home as a private space as distinct from the public sphere of work and production became possible in the nineteenth century when workplace practices changed as a consequence of the industrial revolution. The factory then emerged as the public place of work and production, while the home was cast as the site of private consumption and leisure. However, as Morley (1986) and Gray (1992) have pointed out, the legacy of this apparent divide actually conceals the truth of the matter: the home has never been a site of leisure for women whose domestic labour has always belied such easy assumptions.

Indeed the entire public-private distinction in relation to work, the home, and the gendering of these spaces as respectively male and female may be increasingly unstable. Current employment trends would suggest that in Australia more people are choosing to work from home and more married women are entering the work force. In April 1989, 226,000 people were working from home, by September 1995 this had risen to 343,300[5] : As of February 1996, two thirds of all women in the workforce were married.[6] The participation of women in the workforce has lead to many of them becoming familiar and comfortable with a variety of the information and communications technologies, including the mobile phone which as Rakow (1993) revealed, has proved to be a valuable aid for `mothering at a distance’. The creation of the home office has inevitably necessitated many business people (as well as academics and teachers) purchasing technologies such as the personal computer and the fax as essential

[4] Studies of migrant families in Australia have demonstrated that the need to preserve the cultural traditions of the country of origin may be a compelling reason why parents seek to limit their children’s access to `Australian’ media (Turnbull, 1993)

[5] Australian Bureau of Statistics, *Persons Employed at Home*, September 1995, Cat. no.: 6275.0.

[6] Australian Bureau of Statistics, *Labour Force Australia*, February 1996, Cat. No. 6203.0

components of the modern workplace. It is therefore worth speculating on how these developments in workplace culture might affect the use of technology in the home.

One way in which new technologies such as computers may be introduced into the home is because of their acknowledged function as work-place tools. Another possibility is that they are introduced because of their perceived educational possibilities, particularly with reference to children; and indeed this seems to be the way in which many computer companies choose to advertise the home computer (Nixon and Luke, 1996). What is least likely to be acknowledged (as in the case of television) is the purchase of new technologies for their entertainment function - unless that function can be related to the more worthy goals of work and learning. What is most interesting about these various functions is the fact that they situate within the home activities formerly located in those public spaces specifically devoted to work, education and entertainment. The home therefore becomes a space where the public and private intersect as new technologies are used for a variety of different purposes, depending on the particular requirements of the family concerned.

What are the implications of this collapse of the public/private distinction in relation to the home for the consumption of new media technologies, in particular online services? What are the politics of gender in such consumption? How are these expressed in the everyday use of technology? In order to address these questions, I shall consider the case of the Browns (not their real name), an affluent middle-class family who already have a number of different information and communication technologies in their home.

The Browns: a Case in Point

The Browns' home is on a large block of land in an outer suburb of Melbourne. Mark is a lighting engineer and has been using computers to design complex lighting rigs in public venues for over ten years. It was he who first brought a computer into the house where it now sits, upstairs in the study which is attached to his and Kerry's bedroom. At the other end of the room is Kerry's sewing station, equipped with a computerised sewing machine on which she makes clothes for the family and does intricate embroidery. Kerry describes her husband as something of a computer buff, suggesting he `loves' the computer and is always upgrading it. During the week, he often takes it into work because it is more sophisticated than the office computers, but uses it at home for both work and entertainment. Kerry says she hasn't `got into it yet' even though she is not working outside the home at present. Indeed it is ten years since she left the work force in order to have children, having entered it at the age of sixteen as a public servant.

The Browns thus follow the pattern described earlier: a computer was introduced into their home because of its function as a work-related tool, although it has now been appropriated for other purposes. Because Kerry left work before computers became such an integral part of the work-force culture, she has no previous experience with computers upon which to draw in the domestic context - which is clearly one reason why she is less comfortable using it than her husband and children. Kerry even suggests that women like her fear computers `more than anything else'. Whilst lack of work-place contact is one aspect of her reluctance to use the computer for her own purposes, Kerry also attributes this reluctance to inherent gender differences: in her opinion, men are more ready to `take the plunge' while women are more hesitant, unsure of themselves and what they are doing. While this may be true of women who share Kerry's experience, or lack of it, the example set by her own children would apparently disprove some aspects of these gender related claims.

The Brown children, Holly 10 and Sam 6, both attend a private school where they have been encouraged to use computers since Prep. Kerry suggests that Holly often does school projects on the home computer, using the CD-ROM encyclopaedia, *Encarta*. Holly also likes experimenting with different fonts and producing newsletters. She has some skills in navigating the World Wide Web on Netscape, and already has a number of favourite sites connected to movies she has enjoyed such as *The Lion King*, or places she has visited with her family on their many overseas holidays. Holly's willingness to embrace and experiment with computer technology therefore suggests that in this instance, gender is a less significant factor than

generational factors. This is not to underestimate the influence of Holly's school which has clearly taken a pro-active role in supporting girls' early introduction to computers.

Gender is, however, still a significant factor in how technology is used in this home. For a start, it is the father, his income and occupation which has made the computer technology initially available. This is indeed an affluent family and the fact that the father is eager to keep up with technological innovation supports research which indicates that wealth, and in many instances the wealth generated by proportionally higher male incomes, is a determining factor in gaining access to new technologies.

However, as noted earlier, Mark not only uses the computer for work, but also for play, often with his son, Sam. And it is this element of play which confirms the already signalled gender differences in the organisation of leisure time in the home. While Mark and Sam feel no guilt about their time together `playing' at the computer, Kerry cannot imagine herself doing the same thing. Women, she suggests, always feel they need to be doing something `constructive', because the home has traditionally been the site of their domestic labour. Once again this would appear to be a generational factor since this is clearly not the case for Kerry's daughter Holly, who uses the computer for both educational `work' and`play'. Whether this will always be the case is a different matter. When and if Holly becomes a mother herself, will she feel the same way about `constructive' work as opposed to computer play at home?

But let us pursue Kerry's uncertainty and fear of the computer further. Clearly she feels no such anxiety when dealing with other forms of technology in the home. She regularly uses the telephone-fax which sits on the shelf separating the kitchen and family room, and has no difficulty or anxiety about programming the two video recorders in the household. Indeed Kerry told me with some pride that she knew how to programme the video even though Mark did not and the whole family was reliant on her in this regard. Kerry's attitude to the video recorder as a technology therefore contradicts Grey's findings (1992) which suggest that women are unwilling to learn how to operate the video because a) they fear the technology and b) they do not want to overcome this fear in case programming the recorder becomes yet another domestic chore assigned to them. Kerry's pride in her ability to program the video recorder was echoed in her relationship with the Pfaff sewing machine which sits in the study alongside the computer. Once again, this is a piece of technology which she has mastered with little difficulty. Why then she then does she feel unwilling, or unable, to make the transition to the nearby computer?

And here we begin to get into that murky area where feelings and emotions cloud the issue. While Kerry privately expresses her reluctance to embrace the computer and its available technology in terms of her lack of experience, in a subsequent kitchen conversation involving the whole family, Mark suggests that there is more at stake: that Kerry's reluctance stems from an anxiety that if she succumbs to the computer then this will mean that the whole family is `involved' with it. In other words, the computer as technology presents a threat to Kerry in terms of its potential to alter the already existing structures of her family life in ways which she finds difficult to express. In this scenario, Kerry is cast as the protector of the family unit attempting to maintain boundaries which may be irrevocably breached as a consequence of changes brought about by technology.

Silverstone and Hirsch (1992) have argued that the media (and we might add technology in general) are perceived to pose considerable control problems for those trying to maintain boundaries about their home and family lives; but, as already suggested, different families have quite different perceptions about where such boundaries should be drawn. In this way, the same piece of technology may present quite different problems to different families. Clearly, not all technologies represent a threat to this family's boundaries. Kerry feels no anxiety about the fax, the video recorder or the sewing machine. So what boundary is it which the computer threatens?

One anxiety which Kerry did not articulate in either of our two conversations was her concern about the representational nature of the computer as a media form and what it might bring into the home in terms of image and content. This may be because I didn't ask - but at the same time - it never emerged as a topic. This is unusual given the amount of public debate which has occurred about the pernicious effects of computer games and computer porn. In this

debate (as in the debates about comics, radio, cinema, and videos which have preceded it), children are regularly cast as the passive victims of a perverse technology and parents (particularly mothers) urged to become involved in public debates about the need for censorship. Liberal voices such as that of Dr Alan Ashton (*The Australian*, December 12, 1995) calling for education and not legislation are constantly overwhelmed by more strident calls for greater control and boundary maintenance by the state on behalf of the community. Meanwhile, never slow to miss a commercial opportunity, software designers are already offering parents expensive packages which supposedly screen out unwanted words and images so that their porn-bent offspring will be unable to access them.

Kerry and Mark, on the other hand, share a number of very positive attitudes towards the computer and the need for censorship did not appear to be an issue for them: because Mark uses the computer in his work, the utilitarian and functional status of the computer guaranteed its place in the home; because Holly and Sam both use the computer in school, its status as an educational tool is both recognised and applauded; because Mark and Sam play elaborate computer games, together and alone, the entertainment and social function of the computer is acknowledged. Both parents seemed keen that their children become familiar with computers in relation to their future educational and work opportunities and Sam's computer play was regarded as a valuable stage he had to go through before learning to use the computer more purposefully. While these are quite conventional discourses about the positive role of the computer in the home which have been noted elsewhere (Murdock *et al*. 1992), a critical issue for Kerry would appear to be the amorphous threat which the computer poses to the boundaries which she has established about its role in the home. However, because these anxieties are amorphous does not mean that they are insignificant since they may be the major reason why Kerry is unwilling to embrace the technology.

Another, more easily identifiable reason is that as yet Kerry can imagine no role for the computer in her own life**:** she cannot relate it to her current domestic activities and is not interested in using the computer for play because of her already identified feelings of obligation to be always doing something constructive. However, when I suggest that we might try accessing particular sewing groups and information about embroidery through the World Wide Web, Kerry expresses considerable interest. We then download twenty of the 100 `sewing' pages which Netscape casts up. Even as I am doing this, I realise that what I am acting as a mentor for Kerry and that the need for women to mentor other women in the use of computers is a constant catch-cry of the feminist literature on technology. It would seem that in many instances women will embrace computer technology once they are introduced to it in terms of their own interests and that this is much more likely to occur if this introduction is enabled by another female.

Kerry's sewing and embroidery is a significant aspect of her perceived domestic role and contribution to the economy of the household. She uses her machine to make clothes for herself and the family, as well as more elaborate pieces of embroidery which satisfy her creative inclinations. Kerry's embroidered artifacts have the advantage of being both utilitarian and aesthetically pleasing: their status as potential family heirlooms being another aspect of their value laden creation. If Kerry finds a function for the computer in relation to sewing, which is something she does both for pleasure and as a contribution to the domestic economy, will she become more inclined to use the computer on a regular basis? What if she finds a news group dealing with aspects of the kind of machine embroidery in which she is interested? Will Kerry then find the computer provides her with opportunities for increased sociability related to her specific interests? Will such functions provide her with sufficient reasons to overcome her suspicion and breach the boundaries about its use which she herself has already established?

It is clear from the above discussion, that there are a number of critical and inter-related factors affecting Kerry's relationship with the computer technology in her home. The first has to do with her feelings of insecurity about the technology based on lack of familiarity or knowledge. The second relates to the fact that Kerry has so far been unable to imagine a role for the technology which complements her current interests and activities: she has no use for it. And finally, she is resistant to the computer because of some deeply felt anxiety about its potential threat to the boundaries which she has established for its use: Kerry wants to restrict the influence of the computer in the home by not using it herself. This latter point brings us to the basis of such an

anxiety. What does the computer represent? How does Kerry imagine it as a piece of domestic technology?

Gendered Technologies?

In a study designed to elucidate the subtle meaning of domestic technologies for their users, Livingstone (1992) suggests that women tend to judge domestic technologies in terms of their convenience and/or the ways in which they might facilitate sociability. In other words, the family dishwasher is valued because it saves on time and effort (convenience) whilst the telephone is important for maintaining social networks between families and friends (sociability). The men in Livingstone's study, tended to value a technology according to its status as a `tool', and as an alternative or even a substitute for sociability. But is this always the case? It is possible to document women valuing a technology for its tool-like capabilities (I'm using my computer as a tool right now); just as it is possible to document men using a technology to promote sociability, as Sherry Turkle reveals in her account of online virtual communities (Turkle, 1996: 177-209).

If we consider the role of the computer in the Brown home, Mark uses it for work and for entertainment, Sam uses it for entertainment, alone, or in conjunction with his father. Holly uses the computer for school work, and entertainment, and has tried to use the E-mail facility to enhance her social networking. In other words, both male and female members of the family are using the computer for a similar range of purposes; work, entertainment and socialising. But, Holly complained, she couldn't get the E-mail to operate efficiently, and even if she did she had no-one to talk to because so few of her friends had E-mail. In this way, it is clear that Holly imagines the function of E-mail in terms of the telephone or even the fax machine, both of which she regularly uses in order to maintain contact with her friends from school when they are at home or on holiday. Holly therefore wants to use the computer to maintain social relations outside the home rather than in the home. And here we arrive at an apparent gender difference: while father and son support each other in their computer usage in the home, Holly has to seek outside support for the kinds of things she wants to do with computers since her mother does not share the same computer skills or interest.

Holly's lack of social support for her computer interests within the home is a problem for her because, she tells me, she has very few female friends who share her interest in computing. This factor alone does not augur well for her future involvement with the technology as Wheelock's (1992) study of 39 families in the North of England reveals. In direct contradiction to the supposition that only women and girls look to the computer as means of increasing social opportunities, Wheelock found that while boys increasingly used a shared interest in computers as a focus for socialising, girls were less likely to make this technology the basis of their networks, thereby missing out on the opportunity to pool knowledge and technical skills. The fact that it is the boys and men in Wheelock's study who used the computer as a relational tool suggests that there is nothing inherently masculine or feminine about the technology or its use. But is this true? Are technologies entirely neutral, capable of infinite adaptation to the social needs of those who use them?

In a fascinating study which suggests that how technologies *may* be adapted to the particular social demands of those who use them, Diane Zimerman Umble (1992) describes how the Amish community of Pennsylvania regulate the use of the telephone. In order to minimise the impact of the telephone on their traditional way of life (whilst availing themselves of its advantages as a medium of communication for summoning the vet in an emergency, or facilitating business deals with the non-Amish groups) telephones are housed in wooden shanties, away from the home which is the physical and symbolic centre of the Amish way of life and worship. Each telephone is then employed by six or seven families in a cooperative manner which underlies the communal basis of their religion. Thus, the Amish regulate the technology and maintain the boundaries of their community in mutually agreed upon ways.

If this latter example would seem to support the notion that any technology affords an inherently neutral set of potentials; this may not always be the case. As Judy Wajcman (1991: 25) insists, it is impossible `to divorce the gender relations which are expressed in, and shape

technologies from the wider social structures that create and maintain them'. Clearly significant decisions and interests shape the technology and predispose the nature of its deployment, however ingenious its consumers may be in adapting it to their own ends**.** There are many social determinants which affect the design and implementation of technology: and one of the most significant is gender. How and why?

It has been argued that the history of industrialisation features men as the designers, creators, and producers of technology whilst women appear merely as the mass operatives (Cockburn 1992). But as Wajcman (1991: 16) points out, this claim masks the fact that women either invented or contributed to a whole slew of significant technologies including; the cotton gin, the sewing machine, the small electric motor, the McCormick reaper and the Jacquard loom. Because their contribution has been `hidden from history' until feminist historians brought it to light; women's crucial role in the development of industrial technologies has therefore been underestimated. Despite this reassessment, it is still generally agreed that women have had relatively few opportunities to contribute to the design of many other and more recent technologies, including the computer, its hardware and even the development of the Internet (Sofia 1993).

The absence of women from computer technology design and implementation is attributed to any or all of the following causes: a) their absence from Computer Science classes; b) the under-representation of girls in Maths and Science classes at school; c) that complex web of social and cultural influences, the result of which is, girls fail to develop an aptitude or inclination for those subjects which will give them access to careers in technology. Sometimes girls' lack of numerical and spatial skills is attributed to the differential treatment of boys and girls from birth. It is then proposed that boys are encouraged by the ways in which they are handled and addressed to develop their spatial and technical abilities, while girls are encouraged to develop social and linguistic skills. It is also argued (often using object-relations theory) that boys and girls develop differently because of the different nature of their relationships with mothers and fathers (Wajcman 1992: 7). In this way, because boys seek to differentiate themselves from their mother in order to model themselves on their father, they must reject their former attachments and become independent and solitary. Girls, on the other hand, have no need to perform this kind of differentiation and their relational tendencies are thus fostered by a same-sex identification and attachment to their mothers.

As a consequence of the now generally agreed upon principle that gender differences are socially produced and thus malleable, strategies are devised to encourage in girls the necessary inclinations towards the sciences. Efforts are made to make school and workplace cultures more conducive to the participation of women in non-traditional disciplines and labour. Should such proactive campaigns be successful, then we may well be able to look forward to a time when women are equally involved in the creation and design of those future technologies of which we have not dreamed. However, at the moment we are still faced with the situation that, at least in the realm of computer science and the new communication technologies, women's presence is only just beginning to be felt.

In this regard, there is an extensive feminist literature and critique of the computer and its design which suggests that the binary logic upon which it is based privileges a mode of thought which is in direct opposition to analogue modes of inquiry. Furthermore, this opposition supposedly privileges the rational over the intuitive, with the former coded as masculine and the latter as feminine (Wajcman 1992: 9-12; Sofia 1993: 34). Thus the computer, by the very nature of its design and interface, is perceived to favour masculine modes of inquiry and thought. And this is before we deal with the already socially encoded meanings of the computer and its association with militarism, war, the space race and other `aggressive' moments for which it was arguably designed (Sofia 1993: 77).

And so it would seem to be the case that particular technologies may indeed be gendered as a consequence of their design and implementation. And yet, there is also evidence to suggest that whatever the gender of the producer, or the gendered function he or she envisages for that technology, once it is appropriated by a person or comunity, then it may be adapted to specific needs hardly imagined by its creators. For example, it has been demonstrated that in very general terms men tend to use the telephone for instrumental purposes and women use it for a

variety of socially motivated reasons including: kinship maintenance (Gillard et al, 1994); `mothering at a distance' (Rakow 1993); `visiting the sick and disabled (Williamson 1993), or keeping touch with friends.

In order to correct the perceived gender imbalance in the creation of new technologies, what is often called for is a greater involvement by women in the conception, design, and implementation of these technologies (Gillard 1994). However, this may be an overly simplistic solution since it is abundantly clear that not all women or all men are identical in their needs or desires. The essentialising of gender differences, particularly with reference to technology and its uses may be fraught with philosophical and practical problems: it is quite possible to imagine women wanting `masculine' functions from their technology and vice versa. A more democratic line of approach might involve inviting a diverse range of people from all walks of life to consider the possibilities which any technology might have for them in relation to their already existing patterns of behaviour or perceived needs, and how these might be changed as a consequence. Such possibilities might be explored through forms of naturalistic research by giving people access to new technologies for a period of time and establishing how these are used by means of different kinds of data gathering processes (including self-report diaries, observation, interviews and surveys).

Imagining the Future

When I asked Kerry Brown about how she might use online services to the home, her responses revealed that she immediately conceived of such possibilities in relation to her specific interests, concerns and practices at the moment of speaking. In other words, like all of us, Kerry could only imagine the future in terms of her present.

Kerry explained that she currently uses the telephone to transfer money from one Visa credit card account to another when it comes to paying the family bills. When I mentioned the possibility of online banking services to the home, she welcomed these in terms of their time-saving features. More time, she argued, would enable her to pursue other activities, including her sewing which, as has been previously noted, functions both as a hobby and as a contribution to the economy of the household. It is interesting to note that once again Kerry envisaged the saved time being spent in purposeful, domestic activities: what she earlier described as `doing something constructive'.

Kerry also currently `shops from home' and orders quite a number of items, including clothing, from both American and British catalogues. Yet again Kerry referred to the time-saving aspect of such a provision, as well as its convenience. She liked sitting at the table with a cup of coffee leafing through the catalogues before faxing in her order. It might be noted that Kerry preferred the fax over the phone because, she argued, there were less likely to be errors if she wrote the order herself rather than relying on an operative at the other end. Here we see a choice being made of one mode of communication over other because of different aspects of the technology itself. Although the telephone might be the more `social', the more immediate and pesonal mode of ordering, Kerry prefers what she perceives as the greater control she has by writing the order herself and sending it by fax.

Another aspect of Kerry's catalogue shopping was her assertion that it provided her with a much greater choice of items than she would get if she went to one of the large suburban shopping centres or department stores in Melbourne. The disadvantage of these she perceived to be their `sameness' since identical goods tended to be sold in syndicated shops across town, the State and even the country. It might be added that shopping from Ameican and British catalogues was one way in which Kerry guaranteed her family's `difference' through the practice of consuming items not widely available. Shopping, or consumption, through the exercise of `choice' is therefore related to questions of identity, status and self-expression. Kerry thus draws attention to her role as manager of the household and its public presentation in terms of her activities as a consumer: she is indeed charged with `keeping up appearances'.

When I suggested that Kerry night enjoy online shopping from home, Kerry pointed out that what catalogues, online or otherwise, couldn't give her was the `feel' of a fabric. The

importance of feeling should not be underestimated, since Gail Reekie (1993) has effectively argued that this is but one aspect of the aesthetic and sensuous experience of shopping in a department store, the decor of which has been precisely designed to soothe and please the female shopper. There is therefore much more to shopping and the consumption of goods than merely finding the desired item as quickly as possible.

If we take these two examples (online banking and online shopping) as a starting point for reflection on the future of technologies in the home, we arrive at some predictable and less predictable conclusions. It is predictable that Kerry would think about online services in relation to her already established economies of time and effort. What is less predictable is her focus on the tactile, aesthetic aspects of shopping: suggesting that sometimes we (perhaps only some of us) just have to go to the shops. What we might conclude from this is that if the designers and providers of new technologies to the home imagine the potential of such services purely in terms of time and function, then they will underestimate the attractiveness of the alternatives.

For example, how does going to the shops as opposed to shopping from home compare with the experience of attending a football match or watching it on television? Clearly there are advantages and disadvantages for both sets of experiences. Shopping at home saves time and effort; the frustration of finding a parking spot and trailing round different outlets looking for the right size, shape or colour. However, what is lost is the opportunity for `getting out of the house', the chance of meeting or being with others or the possibility of turning the whole event into a social occasion to be shared. And, as already suggested, there are the aesthetic and sensuous aspects of the experience to be taken into consideration. Similarly, going to a football match (especially in Melbourne) maybe be plagued with problems of traffic and weather, visibility and comfort. Watching the match at home avoids these disincentives and assures the TV spectator of a perfect (though pre-selected) view of the game, including slow-motion, replay and all manner of other compensatory strategies designed to keep them watching. Again what is lost are the social, cultural and aesthetic dimensions of attending a match which might include, as John Goldlust (1987) suggests, the fostering of community spirit and local loyalties which have been undermined by the conquest of televised sport. Despite such foregone conclusions, there may be occasions when one alternative is to be preferred over the other, such decisions depending on those complex factors which influence our course of action at any moment in the conduct of lives lived in relation to changing circumstances. Each decision may be made in the light of, and even in despite of, what the technology in question can and can't offer us. For these reasons, it is hard to predict how new technologies might be used even when we know a considerable amount about their potential and the social context in which such potential might be realised.

The Future is Tomorrow

One of the major problems in imagining the future use of technology in the home is that the representations of such uses are so rarely related to the everyday activities and experiences of the intended consumers. In this regard, the popular media have much to answer for as they regularly seize on the most sensational aspects of new technologies, employing these as new, trendy, sites for the staging of old anxieties about threats to the self and the social order. The notorious article, `Data Rape', by Julian Dibbell which originally appeared in the American magazine *Village Voice* about an incident which occurred on the LambdaMoo Internet site was syndicated across the world. It ran in Australia as the cover story in the Melbourne *Age* and *Sydney Morning Herald* (February 19, 1994) with the chilling caption, `Rape in Cyberspace'. The fact that this article was seized on so eagerly by the international press reveals more about such media and what they think will attract people's attention than it does the actual day to day workings of the Internet. The tragic fall-out of such obsessive returns to the apparent dangers of being female on the Net is that women who have no direct experience of the new technologies which offer such access are hardly encouraged to venture into the unknown.

And yet, valiant efforts *are* being made in order to encourage women to embrace the new technologies: bookshops are awash with how to and help guides. Recent publications would include *The Internet For Women,* which offers valuable advice about getting online in the

context of a feminist argument about the political use to which women might use technology on a global scale to increase their power and potential (Senjen and Guthrey, 1996: *x*). While this is sobering and serious stuff, *Net Chick: A Smart Girl Guide to the Wired World* suggests that different women might want to get online for quite different reasons:

> Net Chicks are progressive women empowered by their access to and knowledge of the Internet. They aren't afraid to explore the digital jungle, finding that this medium offers unlimited avenues to new information, communication and entertainment....Carla Sinclair's *Net Chick* is for the young, hip, post-feminist cross-section of the Net community, those eager to tear down the `no girls allowed sign from the digital treehouse' (Sinclair 1996).

To this perceived end, *Net Chick* also provides information about getting online, but in rather different context of chapters about romance, sex and erotica; fashion, body art and gossip. If *The Internet Guide for Women* has in mind one kind of progressive feminist reader and *Net Chick* another, what of the not so progressive, un-hip and hardly even past the post reader? What encouragement are women who might not meet the *Internet Guide* and *Net Chick* profiles being given to access new media technologies in the popular media which they might more regularly consume such as the *Australian Women's Weekly, New Idea,* or *Better Homes and Gardens* ?

In a week when the *Business Review Weekly* (August 19, 1996) ran a cover story entitled `Internet: The Next Generation', predicting that by the end of the decade, people will spend more time in front of their personal computer than watching television; in the popular magazines directed to women in the home, it was business as usual. The cover stories promised gossip and tittillation: `Fergie's Lover Tells of WILD Sex Games at the Palace' (*Woman's Day,* August 26, 1996); `Jason Donovan's Girlfriend Speaks Out on Love Drugs and Wedding Plans' (*New Idea*, August 26, 1996); `Priscilla Presley Sets her Sights on Australia (*Australian Woman's Weekly*, September 1996). The conclusions we might draw from this comparison are as follows; that the editors of *Business Review Weekly* assume their readers will have an interest in, or access to new technologies and will be in the vanguard of consuming such technologies in the home; while the editors of the *Woman's Day* etc. assume that their readers have no such interests. Such assumptions may well be based on readership demographics as indicated by income, occupation and gender. But surely there is a problem here. If the envisaged technological revolution is to take place in the home, why is it that magazines which constantly address aspects of women's lives and presumed interests are not dealing with this topic? For a start, it might be pointed out that the Internet is full of gossip at least as raunchy and titillating as that in *Woman's Day.*

The notable exception to this absence of attention to new technologies in popular magazines addressed to women, was *Better Homes and Gardens* (September 1996) which promised on its cover two pull-out booklets; the first on `Herb and Vegie Gardens' and the second, `A Guide to Home Computers'. On close inspection, it became clear that the fourteen page `Home Technology' guide was an advertising feature sponsored by Intel rather than a feature produced by the in house magazine writers, as in the case of the gardening guide. In other words, Intel paid the magazine to have this feature included. Commercial interests aside, how does the feature present its topic to the readers of *Better Homes and Gardens* ?

After pointing out that more computers were sold in the USA than televisions in 1995, the guide began by suggesting that readers are more than likely to be buying a computer very soon, if they haven't already got one. The feature then goes on to suggest that readers may well use their newly acquired computer for gardening (as in planting guides and virtual landscape construction); for online banking; editing the home video; accessing recipes or craft sites; or *even* playing games (this is down-played, the readers of *Better Homes and Gardens* are probably always much too involved in `constructive' home improvements). The guide proceeds to imagine for its readers how the home computer might be integrated into the design of their ideal living room or study. In this way, the writers go to considerable lengths to construct a domestic role and place for the home computer which reflects the presumed interests of the readers as expressed by the magazine in general. This may well be a sensible and inspired

piece of advertising, but will it be enough to overcome the anxieties of a woman (such as Kerry) who already has a computer but has hitherto been reluctant to use it?

Future Directions for Research

On the basis of the preceding analysis, it would appear that the use of new technologies in the home may well be influenced by a number of crucial and predictable factors; including access and gender. This study, however, has also drawn attention to the possibility that the ways in which people *imagine* technology may also be a critical factor determining their relationship with it. Such imaginings may be influenced by what people have already read, heard and seen about the proposed technology in other media. For these reasons, an empirical study which attempted to relate how women envisaged the role of new online services to the home in relation to the ways in which such technologies are currently being represented in the popular media to which they do have access, would prove a valuable addition to the current state of knowledge. How and why are some women eager to embrace new media technologies, while others feel threatened in ways which they can barely articulate. What is at the core of such anxieties? What boundaries to the self, the home or the social imaginary do new technologies appear to threaten? And why?

Providing people with access to new technologies in the home and then studying how they use them in controlled naturalistic experiments might prove useful in this regard. For example, if people were willing to participate in a study by documenting and talking about their experience of new technologies in the home to a researcher sensitive to the multi-dimensional determinants of technology usage (including the anxieties, hopes and dreams which people might have about them), this would provide us with some valuable insights into why some people embrace and some reject new technologies. Homes might be selected which represent the vast spectrum of possible types based on measurable factors: or indeed similar families might be studied in order to determine how dissimilar they might be depending on their individual social experiences.

If the first goal of such a research project might be to help people articulate their fears, then the second might be to address what is at their core: some fears may be easily dispelled or defused: others may be worthy of serious consideration. In other words, there may be good reasons to suspect a new technology as long as its unintended outcomes are as yet untried and unknown. Even the authors of the *Internet Guide for Women* suggest that anxiety and suspicion in the face of technological innovation may be warranted:

> New technologies continually appear and become integrated into our society, often leaving us no choice but to submit to their promise of a happier, healthier or less stressful life. Occasionally we put our foot down and steadfastly ban them from our home and our lives. For a year or two. Then resignedly we relent. After all the answering machine *is* convenient and it doesn't hurt anybody. Does it? (Senjey and Guthrie, 1996: *ix*).

But they don't answer the question. Further investigation of such suspicions is clearly warranted.

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