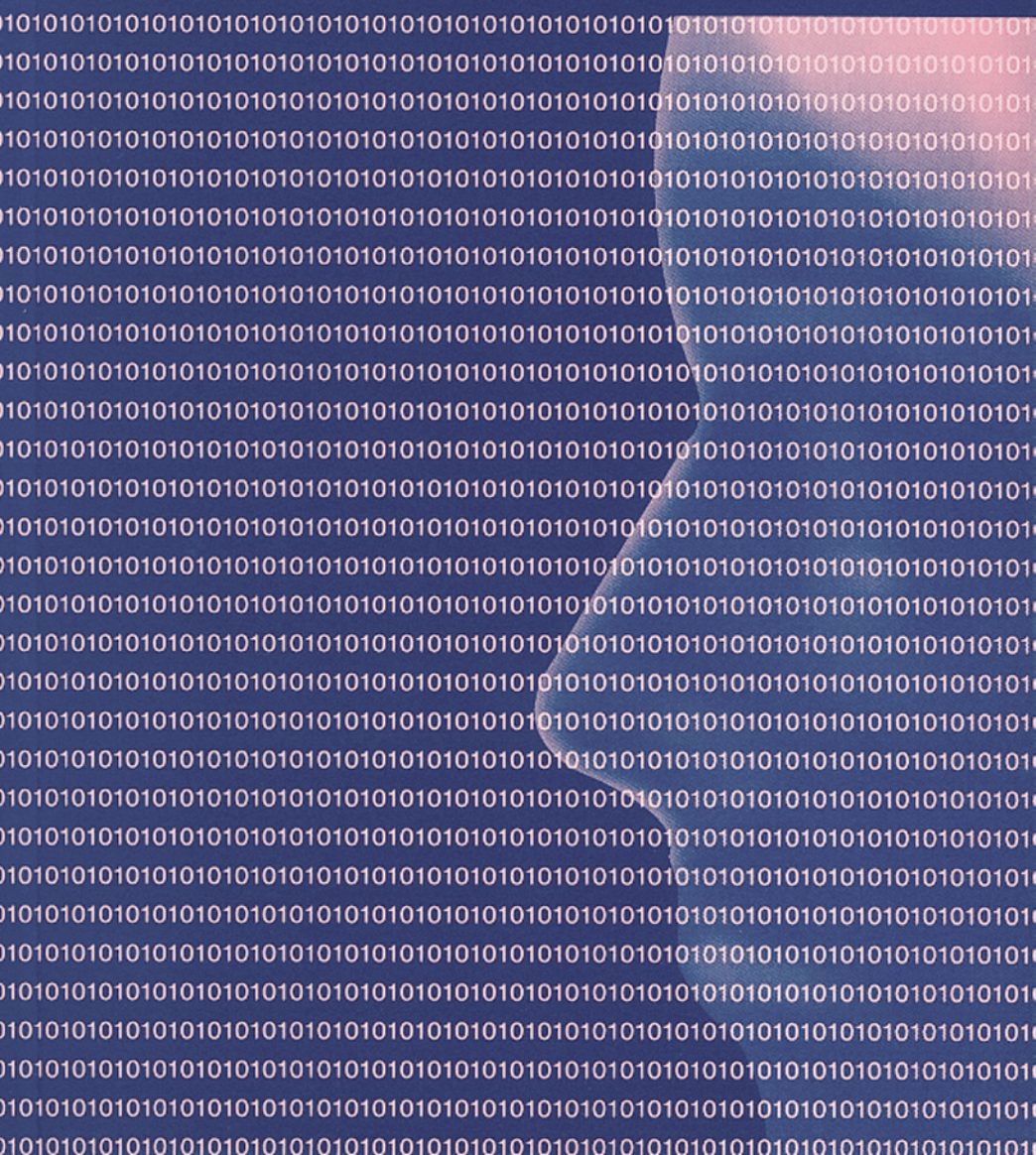
Virtual Gender

Technology, consumption and identity

Edited by Eileen Green and Alison Adam



Virtual Gender

As yet there has been relatively little published on women's activities in relation to new digital technologies. *Virtual Gender* brings together theoretical perspectives from feminist theory, the sociology of technology and gender studies with well designed empirical studies to throw light on the impact of ICTs on contemporary social life.

A line-up of authors from around the world looks at the gender and technology issues related to leisure, pleasure and consumption, identity and self. Their research is set against a backcloth of renewed interest in citizenship and ethics and shows how these concepts are recreated in an online situation, particularly in local settings.

With chapters on subjects ranging from gender-switching online, computer games and cyberstalking to the use of the domestic telephone, this stimulating collection challenges the stereotype of woman as a passive victim of technology. It offers new ways of looking at the many dimensions in which ICTs can be said to be 'gendered' and will be a rich resource for students and teachers in this expanding field of study.

Eileen Green is Research Professor of Sociology and Director of the Centre for Social and Policy Research, University of Teesside. **Alison Adam** is a Senior Lecturer at the Information Systems Institute, University of Salford.

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Contents

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Tables and figures

Tables

Figures

Preface

This edited collection arises from a special issue of the journal, *Information, Communication and Society*, and represents all the papers from that special issue plus a selection of specially commissioned chapters. These introduce debate and empirical research findings in the under-researched area of gender and information and communication technologies (ICTs). The rapid expansion of interest in ICTs in both industrial and academic circles has spawned a raft of research and writing on an exciting array of issues from virtual identities to cybercrime. Curiously, the gender dimension of these areas has received limited attention, historically often limited to discussions of women's absence from technical disciplines, their problems with office automation and their supposed 'technophobia'.

Having undertaken a variety of research and writing projects in the area for over ten years, we felt we knew the main authors in the discipline and the trajectories of current research. Having organized conferences and put together other edited collections, we knew the problems of adequately connecting empirical studies to solid theorizing and we also knew the problems of getting sufficient good material for publication in a research climate where authors often had to make their research interests in gender and ICTs secondary to what were often seen as more respectable mainstream research areas. This meant that we put out a call for papers for the special issue with some trepidation, knowing that we might well have had to trawl round our tried and trusted contacts should the response be thin.

In the event the response was overwhelming, demonstrating a wealth of theoretical and empirical work in progress across a broad range of academic disciplines where authors were able to demonstrate their confidence, not only in their empirical results but also in a range of different theoretical approaches, reflecting the high quality and inno-

vation of ongoing international work in the field. It is heartening to see research on gender and ICTs coming out of the gender ghetto and also heartening to see so many talented researchers who are relatively new to the field. If the quantity and quality of papers for the special issue took us somewhat by surprise, so too did the subject matter of the papers we were offered. Although we realized that virtuality was becoming a hot topic throughout the whole spectrum of writing on information technologies – and this was reflected in the papers we received – we were surprised that we received few offers of papers on gender and work and education, areas which had traditionally been the mainstay of research on gender and ICTs. We rationalize this as relating to the segregation of the research area of gender and technology. As gender becomes a more mainstream topic in research on work and education, and as ICTs are becoming pervasive in the workplace and in educational settings, it may well be that gender in relation to work and education is less of a focus for gender and technology. Yet at the same time access remains a central issue in research on gender and ICTs, although now access is understood less in narrow physical or geographical terms and more as a less tangible though still restrictive concept. But there are also new themes to emerge. We are now beginning to understand consumption of information technologies along a gender dimension. At the same time this recognizes that analyses of ICTs as leisure technologies can be understood in gender terms. This also suggests that our use of ICTs may connect to our sense of identity and self that may be played out in new ways online. One aspect of identity that continues to receive much interest in the political sphere is that of citizenship and there is much speculation as to the possibilities of cyberdemocracy and the concomitant ethical dimension of virtual life. All these new and relatively unexplored themes are reflected in the writing in this volume.

Themes and chapter descriptions

The book is structured around four main themes. Part I addresses the important issues of gendered access to ICTs and the Internet and the complex ways in which individuals' experience of such technologies are mediated by the social process of gender. Part II addresses the under-researched theme of technologies for leisure, pleasure and consumption, including five chapters which incorporate critical discussion of the use of ICTs which range from 'mundane' household items like the domestic telephone, to state of the art technologies such

as virtual reality systems. Part III focuses upon citizens in the public sphere, at work and in the community, with three chapters which raise political and ethical concerns about technology as a product of social, political and cultural negotiations between designers, policy-makers and other groups. The final three chapters continue the focus upon ethical issues, by addressing the shifting boundaries between what we perceive as 'natural', 'human' and virtual realities or subjectivities.

Historical reflexivity and the biographical narrative are employed in Chapters 1 and 4, enabling the authors to insert themselves within the social relations of technology that they conceptualize as social process. The three authors of Chapter 1 analyse the early stages of a research project on women's relationship with the Internet. Placing themselves within the process, Anne Scott, Lesley Semmens and Lynette Willoughby describe and deconstruct the political and academic story which they, as feminists from contrasting disciplines, brought to the project. Introducing three genres: 'the webbed Utopia', 'flamed into oblivion' and 'locked into locality', they argue that each genre has its own narrative logic but that all draw upon a common core of the male history and agree that while the ending is still open, it is rapidly closing in.

A more intimate narrative has been selected by Linda Stepulevage in Chapter 4 which allows her to reflect upon her acquisition of technological skills in childhood and use 'experience stories' to trace a girl's personal relationship with technology. In a most intimate and engaging manner she weaves conceptions of locally situated technological knowledge with familiar everyday practices in an effort to make visible the social relations of technology as process.

Two chapters in Part I draw upon quantitative data to explore the impact of gender upon the ways in which women and men approach and observe technology. Greg Michaelson and Margit Pohl argue controversially that email tends to disrupt and neutralize gender stereotypes found in face-to-face co-operative problem-solving among students. Their study found no statistically significant gender differences in email-mediated problem-solving in measures of message volume and of co-operation. In particular, they found that the gendered strategies that benefit men are disrupted by asynchronous communication. This emphasis upon gendered perceptions and use of ICTs is replicated in Chapter 3, where Kate White, Leslie Regan Shade and Jennifer Brayton draw upon the results of a trans-national study between New Brunswick, Canada, and Kenya in Africa. Testing the hypothesis that men and women approach and observe technology differently, they trace

the social and economic barriers to access and use of ICTs, concluding that more research needs to be done on cultural differences.

In the final chapter of Part I, Gillian Youngs explores the nature of virtual communication and its link to reconceptualizing international politics through a discussion of the author's involvement in a 'Women on the Net' project. This project raises concerns as to the processes of 'relating internationally' especially with regard to the traditional invisibility of women in international politics and the question of boundaries which have been characteristic of state-centred approaches to international relations.

Part II opens with a chapter that also stresses the importance of social and cultural perspectives. In Chapter 6 Simeon Yates and Karen Littleton engage in an interdisciplinary debate about female attitudes and experiences in the area of computer games cultures. Drawing upon data from both psychological and sociological research, the chapter examines the role of the computer and computer games in the personal and interpersonal relations of the users. A cultural studies perspective enables the authors to explore the social relationships conducted around and via the computer in particular cultural settings. While acknowledging research which charts gender differences in the use of ICTs for leisure (Green and Adam 1998), the authors argue for the importance of listening to women and girls who actively use computer games if we are to understand fully the impact of gender in the field of computer gaming.

The next two chapters in Part II begin the theme of identity and subjectivity which is further developed in the final section of the book, themes which seem to dominate many of the contemporary theoretical debates around feminism and technology. Chapter 7 by Michèle White relates the textual processes of looking and gazing at multi-user object-oriented worlds (MOOs) to feminist theories of the gaze. Many users of MOOs want to believe that character descriptions offer a view that is like the 'real' body of the user. However, the author argues that the virtual look of certain characters, penetrating into any 'space' in order to examine other characters and determine their gender, renders an empowered gaze. This chapter suggests that MOO commands perpetuate a series of limiting identity constructs and establish some preliminary ways to interrogate these identity processes, while exploring at a more general level the ways that bodies, spaces and objects are constructed online.

The theme of virtual subjects is revisited in the next chapter, which explores the ways in which virtual reality systems become embedded in

everyday life through leisure and consumption practices. Nicola Green discusses the practices of consumption which (re)produce and maintain bodily and subjective boundaries. Asking questions about the kind of new conventions of gender created in consumption relationships, she argues that immersive virtual reality technologies cannot be understood without considering the locales in which they are embedded and the social identities which they make.

The importance of understanding technologies within their 'everyday context' is a theme continued in the last two chapters, which emphasize the importance of concentrating on the meanings and perceptions of specific technologies within domestic settings. Focusing upon leisure as an everyday practice, in Chapter 9 Eileen Green explores the potential impact of ICTs upon leisure patterns within the household, suggesting the need for more research which asks questions about the extent to which differences, such as gender, affect the level and type of use of ICTs. Taking the view that technology is best understood as both a social and a technical process, the author argues that we need to know more about the ways in which 'ordinary people' appropriate 'ordinary technologies'. Technological artefacts may be marketed as 'leisure goods', but for an object or a technology to be accepted, it has to be found a space and a function within everyday arenas.

Men's perceptions of the 'mundane technologies' such as the telephone become the focus of the final chapter in this section, which analyses the diverse masculinities that become embedded in technological identities. In this chapter, Maria Lohan discusses the ways in which specific technologies become incorporated into our gender identities as men and women. Although a growing body of empirical research now exists on women's relationship to domestic technology, few investigators have explicitly focused upon men's perceptions and use of domestic technologies. Lohan argues that the apparently contradictory stance of looking at men in relation to a feminized and 'mundane' technology, such as the domestic telephone, is a useful research vehicle for examining the processes of variation and change both within genders and in gender–technology relations.

Part III explores aspects of citizenship and ethics in online gender relations. Alison Adam argues that the newly emerging discipline of computer ethics could benefit from insights into feminist theory, particularly feminist ethics, in regard to areas where there may be substantial differences in men's and women's experiences online. This is illustrated through a more extended analysis than is usually available in discussions of computer ethics by means of examples of 'cyberstalking', an

extreme form of Internet-based harassment. This points to the inadequacy of current policy documents which advocate a liberal, free-market approach to the problem rather than seeing it as an issue with a strongly gendered dimension which therefore cries out for a gender analysis.

In Chapter 12, Marja Vehviläinen introduces us to the NiceNet group in North Karelia, Finland, an online women's community and a specifically located geographical group. In a national political environment which sets great store by its citizens having equality of access to ICTs, the women demonstrate their success and confidence in using web technology, becoming technically literate and reinforcing their own sense of community, largely through everyday leisure and work practices such as producing 'canning' labels. This is set against a backdrop that conceptualizes citizenship as carrying a wide range of rights, including those of access to technology.

The next chapter moves from Finland to The Netherlands and to the virtual city in an exciting attempt to analyse the social shaping of a digital city. Drawing upon a case study of Amsterdam, Els Rommes, Ellen van Oost and Nelly Oudshoorn use the concept of 'genderscript' to examine the gender relations embedded in the design. It is argued that in adopting an informal design process, the designers unconsciously projected their own masculine-biased interests on the future users who, despite the 'access for all' intent, emerge as overwhelmingly young, male professionals.

Part IV moves more explicitly from the concept of the citizen to the concept of the self and how this is manifest in different ways in online life. In Chapter 14 Lynne Roberts and Malcolm Parks explore this theme through the interrogation of the phenomenon of gender-switching on the Internet. Having suggested that the primary barrier to gender-switching is the belief that it is dishonest and manipulative, they argue that their data reveals it to be considerably more benign and practised by only a minority of MOO users for a small percentage of their time online. This chapter concludes that gender switching within MOOs of all kinds might best be understood as an experimental behaviour, rather than as an expression of sexuality, personality or gender politics.

The female bodily form is also the subject of the chapter by Krissi Jimroglou, introducing us to 'JenniCAM', a cyborg subject confined to her bedroom and created through the integration of the electronic image and the Internet. This creation, argues Jimroglou, exposes more than just flesh. JenniCAM reveals cultural tensions surrounding epistemological conceptions of vision, gender and identity and questions the

role of technology in the representation and construction of gendered subjects. Using feminist film theory, she demonstrates how the construction and display of the female body via the digital camera transforms our readings of gendered bodies.

Elaine Graham's chapter explores the implications for feminist theory and praxis of a recovery of the goddess. Donna Haraway's 'cyborg writing' may have subverted many of the dualisms of western culture, but Graham warns of the dangers in rejecting the traditional gendered stereotypes associated with unreconstructed 'nature'. Drawing upon Luce Irigaray's work, she argues that some models of 'becoming divine' promise more radical configurations of the goddess, which offers an exciting addition to theories of cyberfeminism.

In beginning the exploration of these new themes which are crystallizing round the topic of gender and ICTs we are hopeful that this volume will spark more debate around the theme of gender and online life.

We would like to thank the regular members of the Equal Opportunities on Line: Gender and IT Economic and Social Research Council seminar series for their enthusiasm and excitement about the plans for the book. Many of them have become contributors during the process. Special thanks go to Flis Henwood, Gill Kirkup, Nina Wakeford and Barbara Cox (from CSPR at Teesside) for their support in organizing the seminar series that continues to be a 'creative ideas space' for exchange, networking and friendship. We are also grateful to Brian Loader, Editor of the Teesside-based journal, *Information, Communication and Society*, who was enthusiastic about us editing the special issue on which the book is based and encouraged us to enlarge it into an edited collection. Thanks also to Michelle Bacca and Edwina Welham at Routledge for their patience and support during the production process.

Last, but not least, we would like to acknowledge the support of our respective families. Ian and Craig put up with us 'disappearing for an hour' – which turned into three – mostly with patience and good humour. Thanks also to Sam, Zoë, Nicol and Sibyl who uncomplainingly put up with us on the numerous occasions when the writing overflowed into time reserved for them.

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Reference

Green, E. and Adam, A. (1998) 'On-line leisure: gender and ICTs in the home', *Information, Communication and Society*, 1 (3): 291–312.

Part I

Gendered access and experience of ICTs and the Internet

Chapter 1

Women and the Internet

The natural history of a research project

Anne Scott, Lesley Semmens and Lynette Willoughby

Abstract

This chapter represents a narrative, 'women and the Internet', as a women and technology origin story with a fixed beginning, a contested centre and an open ending. This chapter analyses our engagement with this narrative as a pilot study was conducted to look at women's perceptions of, and relationships to, the Internet. Although this story felt like a coherent and persuasive narrative, this was questioned as the outcomes of the pilot study were reflected upon. Women coming to the 'Net' led to a reconstruction of the questions that need to be addressed in researching gender and information technology. This chapter begins by describing and deconstructing the motivating story that was brought to this research project. Three genres are introduced – 'the webbed Utopia', 'flamed out' and 'locked into locality' – which are seen as forming the contested centre of this narrative. While each genre has its own narrative logic, all of them draw on a common tale of historical origins. From each of these perspectives 'women and the Internet' has an ending which is still open, but is rapidly closing.

Three questions are then identified which have been raised by analysis: what do we mean by 'access'?, what do we mean by 'the Internet'? and 'which women'? The seeming simplicity of these questions disguises serious difficulties which research in this area must address.

Introduction

We are three academics – a software engineer, a social scientist, and a microprocessor engineer – in the early stages of a research project on women's relationship to the Internet. We wish to explore means of increasing the access of ordinary women to some of the most powerful

of the new communication and information technologies (ICTs). We also wish to discern why previous efforts to improve women's ICT access have been less than successful. We are feminists, and all three members of our group have a history of involvement in projects to improve women's access to technology, to education and to social power.

This chapter is a reflection on the pilot stage of our questionnaire-based study. It was expected that the pilot study would generate, primarily, methodological refinements and empirical data, but the results presented a rather unexpected set of outcomes. Rather than generating answers, it was found that the study was generating questions. In analysing the preliminary results, we began to reflect on the assumptions we had brought to this project, and on the way these assumptions are embedded in a story which is becoming established as the feminist account of women's relationship to the Internet and other new ICTs. This narrative then became the primary focus of our attention.

It is, perhaps, unsurprising that the 'facts' for which we were looking could not be disentangled from a narrative in which we were deeply, if rather unreflexively, embedded. Feminist epistemologists have established that all knowledge, including our own, must be contextualized (Lloyd 1984; Harding 1991; Alcoff and Potter 1993; Code 1995). As Haraway has noted:

> the life and social sciences . . . are story-laden; these sciences are composed through complex, historically specific storytelling practices. Facts are theory-laden; theories are value-laden; values are story-laden. Therefore, facts are meaningful within stories.
>
> (Haraway 1986: 79)

In this chapter, we would like to begin describing and deconstructing the political and academic story – a story we have entitled 'women and the Internet' – that we brought to this research project. We believe that this story has become familiar to feminists with an interest in gender and information technology; it is becoming – to borrow another of Haraway's terms – an 'origin story' (Haraway 1986). We will be representing 'women and the Internet' as a story with a fixed beginning, a contested centre and an open ending. It was an engagement with this origin story that catalysed our research interests and that informed our questionnaire design in the study's pilot phase. A lack of firm results then inaugurated a process of reflection that has highlighted the discursive construction of that story. It is these reflections, and the con-

sequent rethinking of 'women and the Internet' as a narrative, that will be the subject of the rest of this chapter.

Women and the Internet – a women-and-technology origin story

A near-consensual beginning

'Women and the Internet' is a story that – notwithstanding a few feminist attempts to highlight the nineteenth century activities of Ada Lovelace (Toole 1996; Plant 1997a) – generally begins with the military–industrial complex. Numerous histories describe the development of the first computers during the Second World War to crack enemy codes and to calculate missile trajectories. Large mainframes later began to be used for scientific research and in business for payroll and databases. The linked network now known as the Internet is also described as having had its origins in the US military (Quarterman 1993; Panos 1995; Salus 1995). During the early days of the space race the US Department of Defense created the Advanced Research Projects Agency (ARPA). Part of ARPA's remit was to improve US military communications and, in 1969, four ARPANET computers were connected; these four nodes constituted the origin of the Internet.

Supported by the National Science Foundation (NSF) in the US (Loader 1997: 6), academics and industrialists began connecting to the network. By the time NSF support ended in 1995, the commercial potential of the Internet in the form of the World Wide Web was beginning to be realized, and the Internet had emerged as a globalized communication system (Harasim 1993a; Castells 1996). It was catalysing new means of engaging in politics (Schuler 1996; Wittig and Schmitz 1996; Castells 1997; Tsagarousianou et al. 1998), of constructing identity (Stone 1995; Turkle 1995), of managing business, and of organizing criminal networks (Castells 1996, 1998; Rathmell 1998). Within the feminist tale of its origins, this world-changing technology has been said to have had its origins in a male world with four roots: the military, the academy, engineering and industry (Harvey 1997). Differing versions of this historical account have been used to underpin analyses of the exclusion of women and other minority groups from the Internet via, for example, search engine operation, Internet culture and the netiquette which governs acceptable online behaviour (Spender 1995; Wylie 1995; Harvey 1997; Holderness 1998; Morahan-Martin 1998).

Table 1.1 Women as percentage of users (GVU 1994–8)

	Europe	*USA*	*World-wide*
Jan. 94			5
Oct. 94			10
Apr. 95	7	17	15
Oct. 95	10	33	29
Apr. 96	15	34	31
Oct. 96	20	32	31
Apr. 97	15	33	31
Oct. 97	22	40	38
Apr. 98	16	41	39

Empirical surveys have consistently suggested that women are under-represented as users of the Internet. The numbers worldwide using the Internet have been regularly surveyed by the Graphics, Visualization and Usability Centre, Georgia Tech University (GVU) (GVU 1994–8). Table 1.1 shows the percentages of women participants over the period from January 1994 to April 1998. The early figures show a very low participation rate that rose, stabilized at about 30 per cent, and is now rising again. The US has the highest numbers of women on the Internet; European women, by contrast, represent only between 15 per cent and 25 per cent of Internet users while, according to Morahan-Martin (1998: 3), only 5 per cent of Japanese and Middle Eastern Internet users are female. Other surveys have tried to get a picture of the 'average' user. *Which?*, in its 1998 annual Internet survey, claimed that UK users have a distinct profile: 'They tend to be male, under 35, living in the south, more affluent, employed, with no children living in the household' (*Which?* 1998). This data has played a pivotal role in grounding this tale of women's relative exclusion from the electronic networks.

While 'women and the Internet' has had a wide variety of retellings, the themes noted here tend to make repeated appearances. The resulting narrative has acted as a coherent and motivating origin story for feminists with an interest in the new information and communication technologies. In it, these technologies – with enormous potential to diffuse information more widely, to increase democracy, to overturn the modernist conception of the sovereign (male) individual, and to improve women's everyday lives – seem to have been misused, mis-appropriated and squandered. The point that the ICTs are reinforcing the very inequalities they should be combating is hammered home. As

Spender argues in her influential *Nattering on the Net* (1995), the ICTs represent the new literacy, therefore many women are being rendered as twenty-first century illiterates.

What should be done?

As noted in the introduction, we have been thoroughly immersed in this story. As feminists committed to democracy and to women's full inclusion in the contemporary socio-technological revolution, we have been involved in practical efforts to change this situation. Two of the authors have done a series of conference presentations on women's exclusion from the Internet, described as 'a white male playground' (Semmens and Willoughby 1996). We have written about the increasing privatization of the electronic networks (Scott 1998a), noting the fact that – as military funding has dried up – they have been increasingly orientated towards the interests of commerce and the private sector. We have all been involved in efforts to develop more women-friendly forms of ICT education.[1] We have put our energies into these projects in the belief that, without positive action by interested feminists, the electronic networks will soon be, as Wylie put it, 'no place for women' (1995).

Like others working in this area, we have used actor network theory and social constructionist analyses of technology to argue that technological development is, in itself, a social process; it is an endogenous part of the wider development of society. The shape of technological artefacts is, in both subtle and not-so-subtle ways, influenced by cultural expectations, legal frameworks, institutional imperatives, global finance markets, implicit models of potential users, and social beliefs (Cockburn and Ormrod 1993; Akrich 1995; Franklin 1997; Pool 1997). Historically, if new technologies are to gain acceptance they must, in some way, have acted to construct a social and cultural context in which they 'make sense', and in which they are needed (Callon 1991; Cockburn and Ormrod 1993; Latour 1993).[2] Thus, to be successful, new technologies must be produced in conjunction with new social practices, new social forms and new social networks which are able to receive and utilize them. We have been committed to the construction of new socio-technical practices which are as gender-sensitive as possible.

As interrelationships between the actors developing the 'information society' become denser and more complex, the shape of the new actor network developing around the ICTs (Callon 1991; Latour 1993) will

become less malleable and less reversible; a new techno-social reality will have been created:

> A fact is born in a laboratory, becomes stripped of its contingency and the process of its production to appear in its facticity as Truth. Some Truths and technologies, joined in networks of translation, become enormously stable features of our landscape, shaping action and inhibiting certain kinds of change.
>
> (Star 1991: 40)

If women do not 'fit' well within the new technological standards now developing, they will find themselves being marginalized within developing social practices and social forms. As Haraway has noted, 'not fitting a standard is not the same thing as existing in a world without that standard' (1997: 37–8). The gender and ICT problem thus seems to be an urgent one; once this new socio-technical reality has become firmly established, people who fail to fit well within it must either adapt to it or accept marginalization.

'Women and the Internet', as a narrative, is thus a story suffused with anxiety. New technological standards, protocols, products and structures are being developed at an incredible speed. New legal frameworks, social practices, economic models, organizational structures, institutional forms, cultural traditions, educational practices and forms of discourse are emerging to provide a context for them (Castells 1996; Hills and Michalis 1997; Loader 1997; Agre 1998). The process of development currently underway will thus have direct and far-reaching material consequences. Like many other feminists working within this area, we have seen it as imperative that women are not excluded from full involvement in the design, use and adaptation of the ICTs during this formative phase of their development.

So this story forms a context in which we believe it important to learn why women seem to be relatively excluded from the electronic networks. It was decided that we needed to ask women themselves how they felt about the Internet, about their preconceptions and, after trying the net for themselves, their perceptions. This was the starting place for the pilot study 'Women coming to the Net', in which women attending short courses on the Internet or related subject areas were asked to complete a questionnaire. The shape of the pilot study drew heavily on a bid to the Economic and Social Research Council's (ESRC) virtual society programme, which had been submitted earlier by two of the authors.

Story? Which story?

While 'women and the Internet' opens in a reasonably cohesive fashion, this feminist tale then splits into at least three, semi-competing, versions.[3] At the risk of over-simplifying and caricaturing a very complex literature, we might designate these accounts as: 'the webbed Utopia'; 'flamed out'; and 'locked into locality'.

These three versions of the 'women and the Internet' narrative differ sharply in the way they perceive women's relationship with the Internet. They range from an optimistic celebration of women's subversive activity via the electronic networks to tales of exclusion, harassment and violence. Indeed, these competing stories might be said to belong to different genres entirely.

Account one: 'the webbed Utopia'

Drawing on examples such as the famous case of the PEN network in Santa Monica (Wittig and Schmitz 1996), Light argues that the electronic networks offer women new possibilities for networking and for participative democracy. She insists that this vision is not 'a feminist Utopia like the science fiction worlds of scholars such as Sally Miller Gearhart (1983). Rather, it is realistic and practical; at its core is the concept of seizing control of a new communications technology' (Light 1995: 133).

Whether or not Light's assessment of practicality can carry the tale 'Women and the Internet' all the way to its conclusion, she has correctly identified her genre. 'The webbed Utopia' is heavily influenced by the recent flood of feminist science fiction and fantasy. Sadie Plant, for example, recently stated that the 'doom' of patriarchy is inevitable, and that it 'manifests itself as an alien invasion, a program which is already running beyond the human' (1997b: 503).

The optimism of the webbed Utopians has been reinforced by a number of contemporary examples in which activists have successfully employed the Internet for political ends. Systers, cyber-grrls and other feminist networks, for example, have worked to open up women-friendly spaces on the electronic networks (Camp 1996; Wakeford 1997). Political networking – primarily via email – was successful in influencing the outcome of the Fourth World Conference on Women in Beijing; the campaign influenced both the conference's primary agenda and the scope of its associated non-governmental organization (NGO) forum (Gittler 1999; Huyer 1999). Mexican Zapatistas have used the

Internet to elevate a local dispute into a national and international political issue (Castells 1997). Political activists in China and Malaysia have used Internet-based communication to push the authorities into a corner, thus generating a political backlash (*The Independent* 1998a: 15, 1998b: 18, 1998c: 18). Computer-mediated communication has been used to revitalize urban democracy in a number of cities (Brants et al. 1996; Day and Harris 1997; Tsagarousianou et al. 1998). The ease and cost effectiveness of publishing on the World Wide Web has also made it possible to develop an international women's listing magazine (Burke 1999). The use of the electronic networks has clearly enhanced both local and global networking, thus opening up new social and political possibilities.

'The webbed Utopia' is an account that can, however, remain wilfully blind to dramatic differentials in access to, and control of, the electronic networks. Plant's claim (1995) that the networked organization of the World Wide Web inherently supports feminist and democratic styles of working seems, in this Utopian tale, to give her epistemological logic of networking a precedence over the more material logics of economic and industrial power. While Utopian feminists are busy eulogizing the wonders of women-only alternative public spaces, they are failing to challenge the contemporary use of cybertechnology – by industrial giants, global criminal networks, military strategists, wealthy financiers and international racists – to evade social regulation, entrench political control, and concentrate economic power (Panos 1995; Castells 1996, 1998; Loader 1997; Fischer-Hübner 1998; Lyon 1998; Capitanchik and Whine 1999).

Account two: 'flamed out'

If 'the webbed Utopia' belongs to the genre of science fantasy, 'flamed out' belongs to the horror genre, complete with invisible lurkers, menacing intimidation, pornographers, and even cyber-rapists (Spender 1995; Hilton 1996; Herman 1999). Even in feminist discussions of the ICTs which are primarily devoted to other concerns, references to unprovoked sexual aggression on the Internet form a recurring theme. In a passing reference to pornography on the Net, two authors recently suggested that:

> In these cases, new communication technologies not only help to immortalize the product of a distorted view of sexuality within patriarchal societies, but also help predators to find new victims,

> creating a reverse civil society, a community of the predatory violent. Rapists or paedophiles can connect with their like-minded friends and together they can create a virtual world in which the 'abnormal' becomes normal . . .
>
> (Inayatullah and Milojevic 1999: 81)

In one study of 35 days' worth of contributions to an email list, both men and women reported 'being intimidated by the bombastic and adversarial postings of a small minority of male contributors who effectively dominated the discussions' (Herring et al. 1992: 225). Moreover, a two-day discussion of a feminist topic – during a five-week period in which the other 33 days had been dominated by men – resulted in angry accusations from some of the men that they felt silenced. In fact, according to those narrating this version of 'Women and the Internet', it is women who are being silenced. Studies by Kramarae and Taylor (1993), Herring (1996) and Ferris (1996) suggest that men tend to monopolize online communication, even when the topic of discussion relates closely to women's interests and experience. Clem Herman (1999) argues that sexual harassment on the electronic networks has the effect of silencing women users. These studies of online communication suggest that, to paraphrase Kramarae and Taylor (1993), computer-mediated communication is more a male monologue than a mixed-sex conversation.

The tactic of flaming (aggressive online behaviour) – directed at those who infringe a masculinized 'netiquette' (Sutton 1996) – can be used to harass and victimize women in cyberspace. Spender (1995) discusses at some length the hostile environment created for women by flaming on the net and by the highly masculinized atmosphere existing in some computer labs; these issues have also been highlighted by Kramarae and Taylor (1993), Brail (1996), Wylie (1995) and Herring (1994). 'Flamed out' is by no means, however, a story told exclusively by women. Rheingold (1994), Miller (1996) and Seabrook (1997) have all pointed to the destructive influence of 'flaming' on women's – and men's – ability to participate in computer-mediated communication. These concerns have catalysed the creation of women-only spaces which can act as a 'sanctuary on a hostile net' (Camp 1996: 121).

'Flamed out' highlights the fact that the use of male violence to victimize women and children, to control women's behaviour, or to exclude women from public spaces entirely, can be extended into the new public spaces of the Internet. This powerful and engaging story, however, is also rather one-sided. Within the genre of horror, women

are often presented as helpless victims of violence; in this respect, 'flamed out' is true to its literary roots. Such portrayals can be politically paralysing. Furthermore, they are highly misleading; most net-users do have some means to control or avoid intimidation and violence (Hamilton 1999; Newey 1999). Helpless victimization is not the experience of most women, in cyberspace or elsewhere. This version of 'women and the Internet' can be counter-productive for feminists; if cyberspace is so dangerous, women might well come to believe that their daughters would be safer spending their time somewhere else.

Account three: 'locked into locality'

The third version of 'Women and the Internet' might well find a home in the genre of domestic drama developed by nineteenth century feminist novelists. Like these novels of historical realism, 'locked into locality' is suffused by a melancholy awareness that, while the social, political and economic action is taking place in a distant public space, most women are still shut away at home.

The electronic networks have been repeatedly described as a 'new public space' or even as a new 'public sphere' (Harasim 1993b; Schuler 1996; Samarajiva and Shields 1997). Women, however, are said to be under-represented in these spaces, trapped in a shrinking 'private' sphere of print and of proximate, face-to-face contact:

> After five hundred years, women were just beginning to look as though they were drawing even with the men. They have reached the stage in countries like Australia where, for the first time, more women than men have been gaining higher education qualifications. But this success has been achieved in an education system still based on print . . . And just when it looks as though equity is about to be realized – the rules of the game are changed. The society (and soon the education system) switches to the electronic medium.
>
> (Spender 1995: 185)

The world of literature offered Victorian feminists in a few countries an escape from socio-political exclusion, domestic confinement and stifling mental decay; the electronic networks beckon to turn-of-the-millennium women around the world with a similarly inviting glow. As Arizpe recently noted, 'the Global Age has quietly been ushered in':

> Women who have been forced to live in a confined space, in their houses or in their heads, get the shock we all received when suddenly facing images of other women freely organizing their lives with their partners, participating in political processes, and giving voice to their demands and dreams.
>
> (Arizpe 1999: xv)

In the nineteenth century, the world of print allowed geographically isolated feminists to connect with each other, and thus build nationwide political networks (Lacey 1987; Alexander 1994). By turning inwards with a pen, Victorian feminists could upturn the constraints of the private sphere, and make an impact on the public world of ideas. They could subvert the geographies of public and private. ICT – by dramatically redefining contemporary notions of public and private (Rich 1997: 226; Gumpert and Drucker 1998) – may offer similar opportunities to twenty-first century feminists.

The heroines of 'Locked into locality' must do battle with the prejudices of their contemporaries regarding women's place, women's capabilities, and women's desires. They must struggle to acquire necessary material resources: not a 'room of their own' (Woolf 1929), but a computer of their own and the software, education, training, time and space needed to use it. Women are often identified with local identities and the particularity of place (Enloe 1989; Castells 1997). As these geographies of place and locality are subverted by new geographies of information flow, women face a double challenge: they must defend their local spaces against the threat posed by a disembodied globalization, and they must also create spaces within the new electronic media for their own voices (Escobar 1999).

'Locked into locality', as an account, is thus highly sensitive to the material constraints of time, space, money, educational background, cultural expectations, and employment opportunities, which act to limit women's opportunities and aspirations in relation to the ICTs. Research conducted by those constructing this tale suggests that the obstacles women must overcome to gain full access to these networks are still substantial. Grundy (1996) points out that men are more likely than women to be in jobs providing access to the Internet; Adam and Green (1997) further note that constructions of women's work as 'less skilled' can be used to justify the granting of lower levels of autonomy in women's use of ICTs at work. The use of ICTs at work can reinforce expectations of accessibility and flexibility, which are