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Fishing with false teeth Women, gender and the Internet

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A brief example to begin with: the Digital City of Amsterdam (http://www.dds.nl)

If anything can justifiably be called a "technocity", it is the Digital City of Amsterdam in the Netherlands. It was launched in 1994 at the initiative of Dutch hackers and the political-cultural centre "De Balie" in Amsterdam. Originally meant as a three month experiment financed by the city council that would provide a new forum for political debate during council elections, it was so successful that the city kept its gates open after the elections. Its main goal has now become the introduction of Internet possibilities and facilities to a large public; the Digital City therefore provides E-mail serves, discussion groups and an entrance to Internet for free. Terminals have been put in public places to ensure that people who do not own a computer or a modem can get access to the Digital City.

The interface of the Digital City is based on the features of ordinary cities. There are different theme based squares, such as a central city square, a news and current affairs square, a cultural square and a gay square, which serve as meeting place for people interested in particular themes. Between the squares there are what would be houses in ordinary cities: homepages of inhabitants which contain information, personal stories, hyperlinks to other web sites and many other things.

Amsterdam's Digital City has almost anything an ordinary city has, including the traffic jams before its entrance; in peak hours getting access can take up to thirty minutes. Nearly fifteen thousand people are in the Digital City everyday: nine thousand of them are occasional visitors, the other six thousand are the active part of the twenty thousand officially registered inhabitants of the city. Because of the success of the Amsterdam Digital City, other digital cities have been created by local councils across the Netherlands. They mainly provide government, political and social information and lack the funding to set up the infrastructure for communication facilities .

Some people doubt the success of the Digital City in Amsterdam. An extremely critical article in a local Amsterdam newspaper pointed at the loss of the city's public ideals: the city of Amsterdam often forgets to keep its information updated and the visitors and inhabitants do not seem to be very interested in political information or communication anyway. The public terminals were never adequately maintained and there is now only one left in City Hall, maintained by the city council. The interface of the Digital City is terribly complicated and appropriate for high-speed hardware mainly. According to the article, the figures on visitors and inhabitants obscure the fact that very few people actually participate in Digital City affairs; the majority of them uses the E-mail facilities and Internet entrance only. The news and discussion groups are said to be dominated by a small group of insiders who ridicule and marginalize potential newcomers. The article finally quoted the American magazine Wired, which seems to have claimed that the Digital City of Amsterdam is turning into a ghost town.

The article, of course, evoked enormous controversy: active inhabitants dismissed much of the criticism as not specific to the Digital City but characteristic of Internet use in general, e.g. discussion groups being dominated by insiders. They claim that the Digital City is succeeding in introducing a substantial number of people to the virtual world of on-line communication and information; the number of visitors and inhabitants is exceeding all initial estimations. The Amsterdam Digital City is in this respect more successful than it's American equivalent; so-called Free Nets, which offer on-line access to local government and organisations and offer a platform for digital communication.

Absent from this discussion, is an evaluation of the demographic profile of the City users: a survey held by the Digital City has shown that they are predominantly male (90%) and between eighteen and thirty five years old. The at that time female manager of the city (the 'Mayor') ascribes this to the fact that the first places where you could get access to the Internet were located in technical universities, polytechnics and other work places which are dominated by men. That's why among the first group of Internet users there are so few women. She claims that among the non-traditional new users that the Digital City, and the Internet in general, are attracting the number of women is growing. It is not a fear of technology but a lack of appropriate software which keeps women at bay:

"It's not a fear of technology. Everybody has trouble working with the software you need for Internet: whether you're a woman or a man. The software is the most important barrier. It just has to work and then the Internet or the Digital City isn't man or woman unfriendly." (Marleen Stikker, the mayor of the Amsterdam Digital City in Bullinga, 1995)

However, the user figures of the Digital City are too familiar to be that easily dismissed. It is not merely a matter of time, as the mayor of the Digital City seems to claim, before it will be a city for women and men. There are some specific features op the Digital City that hinder the easy access of women. The disappearance of public terminals is likely to affect the participation of women in particular. Previous research has shown that the presence of public terminals can reduce some of the barriers to female adoption of computer systems (Collins-Jarvis, 1993). Also, the complex interface of the Digital City may discourage women more than men because of their general tendency to doubt their competence to use computers. But even without such specific barriers, the Digital City would most likely be dominated by male users anyway given the more general phenomenon that the access to and use of new information and communication technology is structured along gender lines and other social divisions. In this paper we will summarise and analyse the reasons for these patterns and discuss the various governmental and grass roots strategies that have been developed to overcome them. The first part of the paper contains the more familiar debate on the exclusion of women from the new virtual worlds, the second part however, will focus on women that actually do use new information and communication technologies. We will - as others have recently begun to do (Collins-Jarver, 1993; Kaplan and Farrell, 1994; Regan-Shade, 1996) - claim that a theoretically and politically productive understanding of the relation between gender and technology cannot be built on an analyses of the absence of women from technology only. The presence of women in various new information and communication technologies (NICTs) practices and the factors enabling this presence needs to be analysed as well in order to develop appropriate and effective counterstrategies and policy.

An old story for a new phenomenon: women and communication technologies

Irrespective of the particular time period they were introduced in, most new technologies have been accompanied by discourses of hope or gloom. The debates about the moral decay as some would forebode, or the social elevation as others would have it, supposedly resulting from the introduction of photography, cinema, telephone, electricity, radio, television, video, videotext and the new information technologies are remarkably similar (e.g. Marvin, 1988). They evoke optimism about new and better futures for all of us or they prompt cynical and pessimistic responses that foresee a reinforcement of existing social wrongs at best, but expect the emergence of completely new kinds of injustice to be more likely. Debates about the information highway are similarly structured: once it is realised we won't have to leave our homes to go to work (no more traffic jams), we can avoid crowded shopping malls by teleshopping and we can communicate with people all over the world without ruining the environment by taking a plane. The optimistic scenarios present the information highway to us as the solution to all contemporary social problems from pollution and traffic jams to unemployment and isolation. However, in pessimistic visions the information highway is presented as a first world, white and male domain which reconstructs existing international and social

inequalities and introduces a new division between digital literates and digital illiterates: the information rich and the information poor.

There have been, of course, more subtle analyses of new technologies but they often get lost in the clamorous and more outspoken visions of bright or dim times to come. As far as women and feminists have taken part in these debates, ever more fiercely so, they tend to side with the darker scenarios claiming that the relation of women to technologies - new or old - is complicated and characterised by unease, tension, exclusion and exploitation. In most of these views, technology of whatever kind is seen as just another instrument and expression of gender dominance (for an overview, see Van Zoonen, 1992).

There is certainly a lot of historical support for such claims. To draw only a slightly exaggerated picture: the telephone, for instance, was introduced as a medium for business and information, and the particular uses women put to the new medium were ridiculed and undermined (Rakow, 1988); the introduction of the radio in the domestic sphere transformed this women's domain at least temporarily from a place of conversation into a place of silence in reverence of a medium that needed a technician's (thus usually male) hand to operate anyway (Moores, 1988); many recent new technologies, in particular video, videotext and computergames have heavily exploited the attractions of pornography to seduce a potential group of early adopters like young men; the fascination of home-computers for men has again altered family life, with women having to compete with technology for the attention of the men in their families (Bergman, 1996).

Throughout the decades patterns of adaptation and use are remarkably similarly gendered for all of these communication technologies: business is the main mover of the introduction of NICTs often producing the main early group of professional users (telephone, videotext, computer, computernetworks) which are, because of the nature of labour divisions mainly men. But also the information and communication technologies designed for leisure use attract a group of so-called early adapters that are young, white and male. Even a family medium like television turns out to have been acquired at its introduction for the benefit of husbands and sons to begin with (Van Zoonen and Wieten, 1995).

Not surprisingly then, ordinary women and feminist scholars look upon the newest of information and communication technologies like telematica, digital networks, Internet and other cyber inventions with reticence and suspicion, especially because applications such as the Internet seem to be as male dominated as its predecessors. The number of women active on Internet is only a fraction of the number of men on-line. Although user statistics show a growing number of women using Internet and percentages vary, they still make up for about twenty percent of the Internet use.

Women and technology: explaining absence

Several kinds of explanations for women's 'uncomfortable' relation with infotechnology are given in the literature. There is a popular common sense explanation that refers to social-psychological factors to explain the absence of women: they are said to have less interest in technology anyway, to lack technological skills and to perceive very few useful applications of information technologies. This is an assumption that is present in much governmental policy, as we shall see shortly. Feminist have strongly objected to such frameworks, for blaming the 'victim' on the one hand, and on the other hand for their denial of the gendered definition of technologies. If one defines technology in a more encompassing way, women appear to be skilful and interested users as well as producers, for example in areas such as herbal medicine, agriculture and domestic technologies (Faulkner & Arnold, 1985; Stanley, 1983). Moreover, structural and cultural factors are considered to produce higher barriers for women than individual psychology’s. Structural factors having to do with differences in education, income and social position provide very strong explanations indeed for women's typical relation to technology: on average women have lower incomes than men and therefore less to spend on computers, modems, software, on-line services and other infrastructure necessary to get access to the information highway; on average they work in jobs and sectors in which they have less access to computertechnology than many men; their position in the family deprives them from leisure time, etc. In other words, the fact that women use computer networks less than men do is partly explained by their structural position in society and the private sphere of the household.

As important as structural factors for explaining the uncomfortable relation of women to technology are the cultural dimensions of technology, i.e. the way information and communication technologies acquire meaning as masculine domains and the way they function in the ongoing construction of gender identities. Feminist scholars in particular have enriched the debate on information and communication technologies by

showing that not only are men the more frequent users, but men and masculine values also dominate the contexts of design, production, distribution and marketing resulting in a very strong impression that these are technological artefacts made by men for men. Turkle (1988), for instance, argues that the gendered metaphors of control and submission that encompass computertechnology hinder the development and recognition of computer skills that are based on co-operation and equality, supposedly more in line with what is currently thought of as feminine. Others have pointed at the context of production and design of computertechnology, rooted in the military industrial complex (Wacjman, 1991). Also, the popular figure of the hacker can be seen as constructing computertechnology as symbol of inhumanity and alienation. These (masculine) meanings of technology thus function as a cultural barrier for women; information and communication technologies are seen as incompatible with women's activities and values. As Rogers (1983: p.27) has shown the acceptance and use of innovations is facilitated if they are seen as compatible with "established patterns of behaviour for the members of a social system." From the point of view of equal access and opportunities, women's rejection of computer technologies is a highly negative and problematic phenomenon. But looking at it from the point of view of how gender identities are being constructed and reconstructed in daily life, there is a more meaningful interpretation of women's reticence. "Women use their rejection of computers to assert something about themselves as women: it is a way saying that it is not appropriate to have a close relationship with a machine" (Turkle, 1988: p.50). Thus, for women, rejecting information and communication technologies can be seen as a rational and positive choice, instead of as a sign of their exclusion or backwardness. In more theoretical terms, we can consider information and communication technologies as discursive practices in which the meanings generated in the production and reception process are negotiated, often resulting in the construction of a masculine domain (cf. Van Zoonen, 1992;1994 and Bergman, 1996).

Women and technology: overcoming absence

Several governmental policies have been developed to try to get women to use and enjoy new information and communication technologies in greater numbers; some of these policies have been part of a more general effort to engage women in technology. They vary from schooling projects, obviously aiming at removing some of the structural barriers, to public information campaigns trying to convince women of the necessity to join cyber society. In such campaigns the implicit assumption is that women make the wrong choices in education or in the job market. A campaign to convince girls to choose mathematics and other exact subjects as their exam option in secondary school, carried as its slogan "Choose exact", thus presenting the gendered nature of these subjects as a matter of individual choice neglecting the structural and cultural factors that have produced this gendering in the first place and secondly, ignoring the problems girls encounter when opting for masculine domains and the benefits they get from more 'traditional' options. Another campaign trying to persuade women to choose traditional male work field wasn't accompanied by a similar campaign trying to convince boys to take on more domestic work or to engage in traditional female labour areas. Thus, most public information campaigns construct the problem in the relation between gender and technology as the result of individual psychologies of women who have the 'wrong' preferences and make the 'wrong' choices.

Grass-roots campaigns, set up by feminists who have mastered and enjoyed new information and communication technologies, have taken another road: they typically point at the instrumental and/or pleasurable uses of new information and communication technologies and offer practical guidance to get access to them. An example is the Dutch Woman's Guide to Internet which was published in 1995. The guide, in brilliant pink, provides an introduction to the Internet. It is not as much a manual which tells you how to use Internet, as an explanation of what the Internet is, its history, the kind of information on it and how you can communicate through it. Lastly the implications of the Internet as a precursor of the International Super Highway are discussed.

The author, Marianne van der Boomen, claims that whereas the guide is aimed at women in particular, it can be useful to everyone. Other books in this genre are written for people who want to start using the Internet immediately. The author points at the fact that these manuals are mostly read by men:

"The people who read the Internet manuals are for some kind of reason more often male than female. Apparently women are less eager to use new technical gadgets. But the Internet isn't a gadget for specialists and hobbyists anymore: it is finding its way into our daily lives. And in their daily lives more and more women are dealing with the Internet. In their work, in their education and via friends." (Van der Boomen, 1995: p.10)

Van den Boomen asserts that the fact that women are hesitant either to learn about the Internet or to go on-line is the result of the reticence women show towards technology in general, and towards computing and computer networks in particular. Women first want to know what you can use the Internet for, before they will try it out. That is why, according to van der Boomen, this guide offers an overview of the practicalities of the Internet, why it's useful and an impression of the atmosphere. In the guide she shows why the Internet is both of practical use in various ways, like lobbying, networking, exchanging information and co-ordinating actions, all instruments which are very useful for e.g. the women's movement. Next to that she shows how Internet can be fun: browsing in a bookshop and sending someone you haven't seen in a long time a postcard. The book thus can be seen as an attempt to reconstruct the Internet as a technological practice that is compatible with women's activities, needs and values.

The book caused an interesting reaction among some of the inhabitants of the Digital City who gather in one of the 40 discussion groups dds.femail, for and about women, but open to men also. It was founded when a number of women were sexually harassed via E-mail and wanted to share their experience. Now there are many more topics debated in dds.femail, for example: emancipation, psychological differences between men and women, feminism and birth-control. The debate on the Woman's Guide to Internet centered around the question whether women need a special guide. Isn't the unspoken assumption that women are to dumb to find out themselves? Men in particular objected to making a gender difference among Internet users, either by denying the problem or by ridiculing women who do not succeed in going on-line. In the box are some fragments out of an electronic reaction the author of the book gave to some of the reactions that were posted on the list.

Reaction to the book:

Does the Internet work differently if you're a woman? Is it all of a sudden faster?

Reply of the author: If it only would! Then there would be many more women on the Net as the 15 to 20 percent of the Internet users on the moment. Because most women have got something else to do (usually thousand things at a time), in stead of endlessly trying to learn about that damned Net. Women are not afraid of technology or the Internet; they are afraid to waist their valuable time. They first want to know whether it's useful before they start to touch the buttons. And that's what my book offers. For the people that first want to know what their starting at.

Reaction to the book: So if I understand correctly women need an extra booklet in order to understand the Internet? Reply of the author: Yes. That is, in order to understand *rapidly* everything about the Internet and in order to get rid of some common off-line prejudice about the Internet. Because they don't want to waist any time. Just like the way women learn Word Perfect when they need it to for their work or education, in one afternoon. While many men have been trying to learn it by trial and error which takes year.

Reaction to the book: Yeah, well that's how it goes. I personally have been looking for a book called 'Fishing for people with false teeth' and I'm especially eager to find 'Feminist chicken breeding for the left-handed'. Reply of the author: If you look hard enough you can probably find it on the Internet. Keep trying!

Reaction to the book (by a woman):

I also think women shouldn't be afraid of computers. Computers are useful and you can learn from them. And there are lots of computerprogrammes which are quite easy, like Windows, so nothing can go wrong.

Reply of the author:

I don't assume women are afraid of computers. And neither do I think everything should be made as simple as possible for women. But indeed computers are useful and Internet is a fantastic invention.

Woman:

> As a matter of fact I have a lot of friends who don't want to have anything to do with it. But if I tell them about Internet, they always would like to try.
>
> Author:
>
> Yes, I also know women who don't want to have anything to do with it, or can't imagine why it's fun. But they are not afraid of computers. And it doesn't have to be simpler especially for women. They are no more afraid of technology or more stupid than men are.

The few reactions quoted here show a whole spectrum of denial and negation strategies in the public debate on gender and new information technologies: there is an assumption that technology itself is neutral ("Is it all of a sudden faster?"); there is another idea that women do not have another relation to computers than men do ("so if I understand correctly women need an extra booklet in order to understand the Internet?"); and there is of course, ridicule ("fishing for people with false teeth")

Let us stop here for a moment to consider how the debate about women and information technologies is framed. We wrote: "the number of women is only a fraction of the number of men; women make up only twenty percent of the Internet use. The absence of women is caused by structural and cultural barriers that produce a psychologically valid choice for women not to take part in information technologies. Governmental policy to overcome the absence of women in information technology usually tries to persuade women and girls to become active users of technology, assuming that it is a mere matter of choice. Grassroots feminist strategies point at the instrumental and/or pleasurable uses of information technologies and offer practical guidance to get access to them.

Both options have in common that they take the absence of women as their point of departure. Policy and strategies are thus tuned towards the absence of women and the 'problems' produced by it. It seems that at least two groups are ignored here: the astonishingly high number of men that do not use new information technologies and the women that do use ICTs without many problems. On Internet, for instance, no fewer than twenty percent of the use is accounted for by women, a figure that is probably on the low side because of the ample possibilities to play with gender identities on the net (e.g. Rogerat, 1992). Also, there is much research that shows that in professional contexts there is very little difference between women and men as far as the use of ICTs is concerned. By ignoring such figures, the academic debate, research and policy on gender and information technologies contribute to their construction as a masculine domain, enlarging the distance between women and technology only further. In addition, it does seem rather strange to build theory and policy mainly on an absence rather than a presence. Therefore, in the second part of our paper we shall focus on one of the two ignored groups in the debate on gender and NICTs: women that do use them quite unproblematically (leaving the non-technological male to other researchers for now).

We have started interviewing three women who are on-line. Our results are fairly provisional and aimed at providing some new ideas for research and policy rather than providing definitive data. We will start with describing how these three women came to use computers and computer networks. Next we will describe for what purpose they use computer networks and determine the meaning of computer networks for these women. Finally, we will discuss their experiences of being a woman on-line.

Women on-line

Marjorie is a thirty five years old lesbian woman who lives with her partner in the east part of the Netherlands. She has a doctorate degree in social linguistics and works at a research institute. She uses the computer in her work and got acquainted with the Internet via a colleague. She has a computer and a modem at home. Julie is thirty years old and lives with her husband in Amsterdam. She is a graphical designer and started to study computers in a more 'serious' way after she had done some courses in desk top publishing for her work. Recently she bought a modem, subscribed to a provider and started to use Internet. Monique is a thirty-two years old woman who lives alone in The Hague. She runs her own Bulletin Board System (BBS) at home. She used to work as a wordprocesser but at the moment she works at a computer helpdesk. We met marjorie at a conference on new media. Monique and Julie responded to a message we posted in dds.femail asking women who are on line to respond.

Going on-line

Marjorie had been using the computer for word-processing when she got in touch with computernetworks at her work a couple of years ago. As a researcher at a research institute she had access to the Internet via a UNIX computer. She had heard about the Internet and was fascinated by the idea of communicating with people all over the world. With the help of a colleague she took her first steps on the Internet. He gave her some UNIX commands and then let her find out by herself. She started trying and although initially - as she said - she didn't know anything, got the hang of it soon. She finds it reassuring that she can always ask her colleague for help when she has a problem with her equipment. But as she says: "He's very strict. He will first let me try it by myself, and only if I don't succeed he will come and help me".

Initially she used Internet mainly to mail to colleagues, but gradually she started to use the Internet not for work but for personal reasons. While she only scans mailing lists related to her work for useful information and never contributes or poses questions, she is an active member of other lists varying from African music to writing. She is even a celebrity on a lesbian mailing list because she posts so often in this group. With some of the women on this list, who live abroad, she also has a frequent and meaningful e-mail friendship. Because she is since recently is frequently working at home, she now has Internet access at home. Because her modem is not fast enough to 'surf on the Net' - which also might lead to a huge telephonebill - she makes very limited use of the World Wide Web. She mainly uses the Internet for communication.

This plays an important role in her daily life. Not only does she spend several hours a day writing and replying messages, this contact has a great impact on her:

"The impact of these messages can be enormous. You can see something on the television, but it won't have the same effect on me as when somebody writes me. I mean, last week I received a message from Israel, saying that just around the corner another bom exploded. A message like that, written by people who live on that very spot and who write about their own personal emotions, is so different from an newsbroadcast about this explosion."

As a graphic designer Julie is very experienced with computers. She did a course to learn how to work with different Desk Top Publishing software. Although she noticed in her work that she is good at working with computers, she wanted to know how they actually operate. At the same time she realised that her present job wasn't satisfying enough. When she noticed that people who studied computer science had better job opportunities, she decided to go to the Open University to study computer science. She had read a lot about Internet and decided that because of her study she had to experience it herself. She bought a modem and the appropriate software and installed everything at her computer at home. She describes her attitude towards Internet as follows:

"I think it's something I just have to know: it's inevitable. They're a necessary evil. It's like a washing machine: they’re no fun, but quite handy. I realised I couldn't stay behind. At first I didn't really know what the Internet was about. But now that I'm actually on it I really see the possibilities and I really like it! Of course it does cost a lot of money, but I've reserved some money for it so that I could experience it myself."

Although for Julie it was almost inevitable to go on-line, because she studies computer science and therefore just 'had to know' about the Internet from experience, it was something she decided herself and did by herself. There were no other people around who inspired or helped her, as in Marjories case. Now Julie spends a couple of hours behind her computer everyday. She finds the Internet very useful for instance for her study for downloading computer programmes and to keep in touch with her teacher at the university. At her university there are several Bulletin Board Systems which she also uses. And although at first she wasn't interested in discussion groups, now she is even thinking about starting her own discussion group because she likes as she says herself to chat about all sorts of things and to provoke reactions.

For Monique computers have been a hobby from an early age on. Initially she had a home computer which in time she replaced by a personal computer. Her interest in computers and software grew over the years. When she was working as a wordprocesser she became interested in administrative computerprogrammes which she downloaded from different Bulletin Board Systems (BBS). At home she also spent several hours a night downloading software. Because of the telephonecosts this was getting very expensive and she decided to start her own BBS so she could download software by herself. On her BBS she offers e-mail, discussion groups but also games and other software. She herself uses Internet mainly for communication, either person to person or in newsgroups. She can spend hours replying to messages from her BBS users, or if she wants to, discuss something on television she simply posts a message to a newsgroup waiting for a reply. Information

as for instance on the World Wide Web she finds less interesting, although she sometimes does invest time in reading something she finds interesting. She spends at least two hours per night on weekdays behind her computer. As soon as she comes home from work she checks who called her BBS. After souper she checks whether any new software programmes have arrived and tries them out. In the mean time she has turned her hobby into her work: she did a course on system management and is now working at a helpdesk.

These women all had their own valid reasons to go on-line. For Monique it was the result of a growing hobby; Julie wanted to keep up with the developments because she started a study in this field and Marjorie went on-line because she was fascinated by the idea of communicating with people all over the world. All of them especially value computer networks for communication. Let's have a closer look at why they are so enthusiastic about electronic communication.

Electronic communities

Monique usually communicates with women who call her BBS. These conversations are usually about personal matters, like sexuality and relationships. She states that making contacts and communicating via computer networks is easier. As she says: "In real life I would not go up to a women and say do you fancy to talk?" It's a thrill for her to post a message and wait for a reply. She likes the idea of having conversations with people she has never seen, because of the anonymity. For Monique communicating via e-mail is a relaxed way of spending her time. She reads and writes her messages off-line and can take as much time as she wants for it. She puts a lot of effort in putting her thoughts to words. Sometimes she spends several hours thinking about how to write a particular message.

Marjorie shows the same care in the writing of her messages. She compares writing via e-mail as she does with several good friends to the culture of writing letters:

"It's nothing new really. It's just like letter writing in the 18th century, only much faster. Usually you try to write with very much precision: very balanced and well considered. I think that's the same culture."

As a result of her participation in one particular discussion group Marjorie has friends all over the world without actually having to visit them once in a while, something which is quite convenient for her since she is afraid to fly. Marjorie finds it an ideal way of communicating: while she is hesitant to call someone, she will approach someone by e-mail without a problem. She also uses E-mail to keep in touch with her brother who actually lives nearby. E-mail and the lesbian discussion list have become an important part of Marjories daily life. This communication is not only very frequent, is also very intense. As she puts it:

"It's much closer to you and more real. Like discussions, even if you only read them, you don't just happen to overhear them in a pub or something: it's right there under your nose! You can either participate, or just read them. But eitherway; you will continue thinking about it. Your mind doesn't stop. In this direct way you get a lot of information you wouldn't have normally."

For Julie, communication wasn't what triggered her to go on-line. She mainly was interested what Internet was all about. At first she felt uncomfortable about the idea of communicating with people she had never met:

"It's a new way of thinking and I also realised I was talking with people who were complete strangers to me! That was quite strange: receiving mail from people you don't know. "

Now she finds communicating via computer networks an accessible and relaxed way of keeping in touch without actually talking to someone for instance over the telephone. Compared to the telephone she states that you can be more precise in what and how you want to say something: it is a more relaxes way of communicating. Julie thinks computer networks can be quite useful for networking and is planning to do so. From her own experience she noticed that this actually is a very good way to make contacts. During a journey she met a man on a flight. They talked and he offered her a job. When she returned home she send him a message:

"I would never have called that man. Yeah, I can be loud-mouthed, but sometimes I don't know what to say. E-mail is accessible and less scary."

It is obvious that Marjorie, Julie and Monique have found a meaningful way to use the Internet. Let us have a look at their first steps in the Internet: where they hindered by the barriers as are common believed to keep women at a distance of computing and computer networks.

Taking the first steps on-line

Neither Marjorie, nor Monique or Julie report having had major problems in going on-line. They were all used to working with computers which made the step to the Internet easier. Marjorie was introduced to the Internet by a colleague. Both Monique and Julie had to find it al out by themselves. This however didn't cause a lot of problems for them. Almost to Julie's surprise the installation of her modem and software went very smoothly:

"Well at first there went something wrong but when I found out what the problem was it all went fine. Everything is working perfect! I've heard everyone has lots of trouble getting everything to work properly, but I haven't experienced any problems!"

Monique as a hobbyist tried to find out everything by herself. As she indicates her knowledge of the computer has grown over the years. Instead of taking her computer back to the shop when something went wrong, she now fixes everything herself:

"Well, eventually after you're more experienced, you try to find it out by yourself if something goes wrong. In the beginning I didn't dream of unscrewing my computer: I used to bring it back to the store. Now, the outside of my computer is underneath the table and I can look right into the computer. In the beginning that was a bit scary. But if something goes wrong, well no problem, you put everything back in it's place and start all over again."

And Marjorie, who says in the beginning knew nothing, is now very capable in working with the software and the hardware. She learned the basics from her colleague, who still is willing to help her. But as she says: "He is very strict. I first have to try it by myself, and when I don't succeed in doing something only then he will help me." She finds it reassuring that someone is there to help you if you need it, but she manages quite well by herself now.

Julie, Monique and Marjorie don't seem to make a big fuss about difficulties they experienced in going on-line. The fact that they sometimes don't know all the details on how and what to do, didn't prevent them from taking the step to computer networks. They just try finding it out by themselves. And as Marjorie puts it:

"There really isn't that much to know: "Once everything is installed, you don't have to know how to do anything. It's the same with everything else you have to learn, once you do something often you'll learn it. It's like driving a car: you don't have to know how a car works to drive it. That's what mechanics are for!"

These women seem to do fine on-line. Could we then conclude that the fact that they are a woman doesn't make a difference in going and being on-line? Doesn't gender play a role? Let's have a closer look at how these women feel about their position on the Net.

Being a woman on-line

Julie definitely has the feeling that there aren't many women on the Internet, as shows from the fact that she usually receives mail from men. As she says: "It really feels as a man's world." This however isn't a problem for her, because - as she says - she is used to being a woman in a man's world. In her work she is also one of the few women and although she is aware of the fact that she is different in this world, it isn't a problem because as she can deal with that very well.

Monique, being not only a woman active on the Net but also one of the very few female system operators of a BBS, is also very aware of her 'special' position as a woman. She recalls reactions from other system operators when she first started her own BBS:

"You get reactions like 'Oh, can you also run a BBS?' I said 'Sure! Why not?' But you always get those kind of remarks. Like they think oh you're a woman and you're not supposed to know anything about computers. I

say to them: why only you men are allowed to do this? I just like to do it and think it's fun: it's my hobby! It's bullshit that only men should be on the Internet."

Because of the anonymity she doesn't bother to much about possible harassment: "I use my own name. But they don't know anything: they know I'm a woman and they know I'm called Monique. That's all. In that respect I'm really down to earth: I'm a woman and I'm on the Internet and I'm proud of it. Everybody may know that! And off course there are more men: but that gives you a chance to become unique and that's nice to!"

Marjorie also acknowledges that women in general are a minority on the Net, and lesbian women even more. This means for example that you meet the same women on different discussion lists. The fact that few women have access to computer networking does not mean that only a few women share the information and communication. Marjorie advocates the idea that the women who are on-line should be a kind of intermediaries for the women who are not on-line (yet). This way the information on discussion lists has a far larger distribution than the women on-line only:

"The women that do have access to the Net and that have political ideas, usually women from minorities like lesbians, have a enormous amount of women backing them, who don't have access to the Internet."

This way Internet can be very useful for feminist and gay politics as Marjories demonstrates. Organisations active in this field should have their own homepage in order to distribute information widely. Marjorie notices that discussion groups pick up political matters or other issues that are related to the gay scene and make them known more publicly or even incite action:

"In that discussion list everything which is relevant to the gay community is discussed. Even demonstrations are announced. Either on the Internet or by telephone. The news spreads like a wild fire. And the impact is really world-wide and even on national level it works."

None of the women we interviewed experienced the barriers which are said to prevent women from participating on computer networks. They do experience the Internet to be dominated by men, but they employ their own tactics for coping with their isolation and turning it into a perceived advantage. They obviously do not submit to a male dominance, but have found their own way of using Internet: they have reconstructed so to speak the masculine meaning of the Internet by using it in a way that suits their interests and needs. Their use is not conflicting with their daily life, but has become an integral part of it.

Conclusion

The experiences of these three women shed another light on the social-psychological, structural and cultural barriers women are said to face when trying to go on-line.

Marjorie, Monique and Julie are all in their thirties, living alone or with a partner without children. They are part time or full time employed. Being single or married without children, their home environment is different from the one of the traditional house wife and mother, assumed in most studies on women and information technology. They have more time and money to spend on information technology. Also all three are in work or educational situations which give them an easy entrance to computers and computer networks. Structural factors do not seem to produce barriers for them.

Looking at the way they use Internet facilities, they have found activities which are personally and politically relevant to them and can hardly said to be part of a masculine culture. Marjorie uses computer networks for feminist and gay politics, while Monique has found a way to let others benefit from her hobby by running her own BBS. And all of them enjoy E-mailing with people all over the world.

The communication facilities Internet provides obviously are compatible with the needs and values of these three women making their acceptance and use of the medium unproblematic. But their fascination with the communication facilities of Internet has broader relevance too: the communication facilities of Internet can be seen as the virtual translation of more or less traditional feminine concerns of personal contact, sharing and creating community. In effect, Marjorie compares her E-mailing with the feminine tradition of writing letters that dates back to the 18th century. But also, Internet communication appears to widen the possibilities of communication into directions that many women (and men for that matter) have found problematic. The

sheer informality, anonymity and virtuality of Internet communication obviously facilitates for women making and following up on contacts with strangers.

Marjorie's, Monique's and Julie's personally meaningful uses have turned the Internet in a psychologically rewarding experience for them that isn't at odds with the rest of their life, or their gender identity. Their experience shows that there is a lively 'feminine' culture on Internet that needs to be revealed in more detail in order to 'demasculinize' Internet.

This 'demasculinization' of Internet could be part of more overall measures that employ analyses of women's absence as well as their presence on Internet. The results of our study suggest a rethinking of such measures in several directions. To begin with, it seems smarter to direct policy and strategies at women who are close to information technology anyway than to try to convince women for whom the structural and cultural distance to information and communication technologies is bigger. However, if one does want to develop new overall policies other then the ones already in place, public access terminals should be an integral part of it placed in location were many women and other unlikely Internet users gather. For those completely uninitiated women but also for those women who are familiar with computers but reluctant towards the Internet the software needed for Internet and the interfaces used by the service providers should be as user friendly and as adaptable as possible. This, of course, would be beneficial to a variety of people who are at a far distance from the experienced white young male presently dominating computer culture. At present, none of the more than 500 service providers in Europe have developed special policies for their women clients nor for other unlikely Internet groups, and they are not likely to do so without market or governmental pressure.

Lastly and probably most important for new kinds of policy, is the recognition and publication of the presence of women on Internet and the specific uses they make of it. It would be part of a new mythology to claim that these are specifically or essentially feminine activities. However, women's pleasures in the Internet could be instrumental in showing the enormous diversity of Internet activities and the potential benefits for our present multicultural societies. In such a context, emphasising the compatibility of Internet with a historically specific set of women's needs, activities and values will be more productive than to keep pointing at the masculine character of the Net, therewith maintaining the mythology of technology as predominantly male.

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