

A Technology Named Desire. Changing Perspectives on the Co-Production of Gender and ICT

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A moving target?

The concern for the gender and ICT relationship, above all related to what may be called the woman problem in the Information Society, has been with us for more than 20 years. However, the object of concern has changed radically in this period and so has the scholarly perception of it – although maybe not always in step. To give a detailed account of this process is not possible in 15 minutes and probably not needed to achieve the goals of this conference. However, I believe that some reflection about main features of the changes is in place, and that is what I have prepared.

The audience may wonder what this story has in common with Tennessee Williams' play. I'd like to keep you wondering (but don't expect me to act up to Marlon Brando). The straight point I shall try to make is one about changing engagements with ICT, particularly computers, but also about the problems of coming to grips with the idea that the computer could be an object of desire, perhaps even in plural – as desires.

I have to some extent been an observer of, and to some very small degree also a participator in, the story I will tell. My first encounter with computers was in 1972, when I took my first course in programming. Computers then were mainframes, locked up in non-accessible rooms, to be used through punch cards. I don't think they were talked about in gendered terms, and the students mostly had to punch their own cards.

Women and computing came on the agenda as a social science topic around 1980. It was then framed mainly as a problem related to the future of office work, under the ghost of office automation and the oxymoron of the paperless office. Since a lot of the work women did in offices was rendered invisible by system designers and other agents of increased efficiency, there

was a fear that women office workers, like secretaries, would be replaced by computers that would miss out on a lot of important service tasks. There was also concern that more men than women were trained in the use of computers, thus creating a gendered digital divide that would give men unfair advantages. More generally, this tradition of research developed a topical interest in the way the introduction of computers would shape and be shaped by the sexual division of labour in workplaces.

In the 1980s, increased attention was also given to the issue that the emerging higher education in computer science seemed to recruit a clear majority of men. There came in 1983 a pioneering report written by women students and research staff at MIT's Laboratory for computer science and artificial intelligence, describing the barriers they experienced as women in the computer profession.¹ Their main complaints concerned differential treatment. However, increasingly, the research concerned with the lack of women in computer science pursued the argument that computer science symbolically and culturally was masculine. It was pointed to the close relationship between the discipline and areas considered as essentially masculine, like mathematics and the military, but some suggested that the intellectual practices related to computing, like the character of the formal methods used for programming and systems design.

The 1980s was the decade when the public discourse gradually changed from a focus on mainframes and minicomputers to PCs. Still, the turning point of the analysis was on gender differences at work. An emerging view of computers as masculine and thus off-putting to women, due to the dominance of men among computer scientists, made it even more important to get more women into computer science. The question was how?

The idea that computer science got a kind of masculine imprint from the association with mathematics, led to the suggestion that higher education in computing increasingly should be located in humanities and social science faculties, rather than engineering or natural science. In such locations, the

¹ *Barriers to Equality in Academia: Women in Computer Science at MIT*. Prepared by female graduate students and research staff in the Laboratory for Computer Science and the Artificial Intelligence Laboratory at MIT, February 1983

number of women was definitively higher. However, it remained an issue if the study programmes really were equivalent.

In terms of theoretical approaches, the 1980s saw a slight shift from emphasizing discrimination against women and the lock-in of the sexual division of labour and the use of computers towards an increasing inkling that computers for some reason, in their design and/or through their context, were women-unfriendly. This growing concern for symbolic properties continued into the 1990s.

The hacker pest: Utility as an antidote to enthusiasm

Technology wasn't much fun during the 1980s, neither were computers. However, Sally Hacker had forwarded the argument that men's engagement in engineering and technology did not so much spring from its usefulness as from the pleasure they took from making it. She also thought to observe erotic components in this relationship. Sherry Turkle, in *The second self*, noted with some surprise that some men students at MIT thought computers more interesting than women. However, these observations remained exotic. Women should become computer scientists and computer users to master the technology of the future, to have their fair share of the wielding of power inherent in the possibilities.

As the main normative argument, I believe this idea has remained dominant and for good reasons. What has changed, have mainly been the issues to be tackled to realise this goal and what have been thought as the main qualities of the gender and ICT relationship. The main shift in this respect has emerged from the changed status of the computer, from a good for the few to a common household good. In addition, the change of the computer from mainly a work tool to become an entertainment technology as well as a centre-piece of communication has been important.

Computers started to make their way into homes and into the use of children and adolescents during the 1980s, but the effects of this development came to be noticed in the 1990s. Turkle's observations about young men hackers came to the forefront of analysis of what happened in schools and at universities. In the latter institutions, the percentage of women went from low to even lower, while studies of the role of computers in schools

came to show a very worrisome gender based digital divide. How could this development be explained? What was going on?

In the 1970s, the use of technology to supplement, even to support, teaching was met with scepticism. The computer changed that. Suddenly, governmental plans were made to introduce this new technology in schools, partly fuelled by the fear of lagging behind other countries in creating a computer competent population. However, girls and computers first became a policy concern in the 1990s, when reports about skills and interest deficits of girls relative to boys started to come.

The situation came to be explained by reference to a practical as well as symbolic appropriation of the computer by boys. In particular, computer enthusiastic boys and young men – labelled as hackers or nerds – were seen to mark the computer in a way that made it appear as non-feminine or masculine. This led to efforts to construct a discourse that characterised boys' use of computers as too playful and not sufficiently serious compared to girls' approaches, which were seen as sensible and pragmatic. The task was to achieve a practical and symbolic redefinition of how computers should be used. The hacker pest should be curbed by insisting that computers should be useful. Period!

One of the best examples of a campaign that made use of this idea was the Women and Computing Initiative at the Norwegian University of Science and Technology (NTNU). Here, young women were recruited through a campaign that tried to undermine the stereotype of the masculine computer to replace it by a feminine version. However, as Vivian Lagesen has shown, it did not quite work that way. But that is another story.

What happened through the intellectual shift suggested above? I'll emphasize three aspects. First, a new deficit model was introduced. The problem was not women's deficits, e.g. not liking and not knowing about computers, nor deficits of computers and computer science as being masculine through a structural link to men's dominance in the field and activities like mathematics or the military. The new deficits were with some men who spent too much time with computers, who enjoyed computers unhealthily much, and who used computers for mindless purposes.

Second, and related to the first, pleasure and enthusiasm was constructed as a problem. There was a proper way to become a skilled computer user, which was to learn to use the computer in purposeful, instrumental way as a tool to do certain useful tasks. The figure of the hacker or nerd was introduced as a point of navigation; avoid their ways.

Third, increased emphasis was put on symbolic explanations. If girls or young women chose not to engage with computers, this wasn't so much because they were discriminated but because they made sensible choices, given the symbolic takeover of the computer by the hackers or nerds. Computers were 'gender-inauthentic' for women, according to this point of view; it did not accommodate their gender identity.

This approach could be read as inviting acts of purification to exorcise desire from the computer. As Helen Gansmo has shown in her dissertation, the educational authorities succeeded quite well in this respect. The integration of computers into teaching turned out to render computing boring to the students. Of course, the educational authorities wanted to install a desire for proper use, but that is a much trickier task. On the other hand, students cater well for their desires outside school. The status of the computer as a desirable object in itself probably declined, but it definitely became an instrument to do desirable things.

The (re)discovery of pleasure

The 21st century has brought yet another turn to the meaning and potential of the computer with widespread broadband connections, more powerful graphics and greater speed. The computer has become a very widely used instrument to perform a very diverse set of activities. This has, as Helen Gansmo has shown, resulted in a transformation of the computer from a frontstage technology to a backstage machine. The computer is still running, but in the background doing its up- and downloading and other relevant performances.

Online computer games like World of Warcraft provide exemplary illustrations of some of the changes. This has not only made game playing more social; it represents a very interesting integration of the graphical and communicative qualities of the technology, providing a very interesting

training ground for computer-supported collaborative work and other computer mediated activities of knowledge sharing.

This does not make gender optics less relevant but definitively more complicated. The research of the 1990s left us with three genders: women, nerds and men. The nerds were more or less accused of having colonized the computer to become a machine of playfulness, which had to be moderated. Women's way with computers, the level-headed way, was also the proper approach, which should be installed in everybody. In the 00s, women also may be allowed pleasure with their computers. They may not have to be useful; they may have fun as well.

Perhaps the hacker pest is gone or at least less pressing. Anyway, researchers as well as policymakers have to cope with a situation where we observe and acknowledge greater diversity in the way people relate to and use computers. However, this does not mean that the woman problem in the Information Society has gone away. If we do it by numbers, we still see that women and men on the average use computers differently and with considerable differences in the time spent in front of a screen. This may serve as a reminder that the ghost of gender differences is still with us. What do we do with this ghost?

In our research, we have become increasingly concerned that we need to transgress and transform gender binaries (and many other binaries at that). Too many policy initiatives have been developed in the format of 'one size fits all'. Thus, above all, we need to diversify the concept of gender – maybe even do away with it.

Vivian Lagesen has in her research found that many studies of the gender ICT relationship tend to render the female gender as a constant, as given. If I should be a bit discourteous, I could argue that those of us, who have been doing research on gender and ICT, have tended to treat the female gender in a romantic fashion. Women are ok; the trouble is with men and computers. Female stereotypes are mainly fine – who may argue against the virtue of being proper and level-headed?

However, no stereotype – how wonderful it may appear – is innocent. Do we really want a world inhabited by Pollyannas only? Would Pollyanna actually have a good life in the long run, or is this character too much of a

burden? Stereotypes may be facilitating but they are above all restraining. With respect to computer science, the dominant woman stereotype is a person who wants to work with people and who is a great communicator. But if these are your dominant qualities, is computer science your obvious choice of career? What if you are a woman who enjoy working on your own and isn't a master of understanding other people? Should you avoid computer science? And since the stereotype has a strained relationship to programming, no wonder it is experienced as difficult by many women computer science students?

There is no doubt that fun and play represent inroads to become skilled users of computers; maybe also to develop a professional interest in computer science. On the other hand, so do the experience of usefulness and relevance. Thus, one has to be careful not to reintroduce the binaries of tool versus toy, utility versus play, or instrumentality versus pleasure. This is a main achievement by thinking in terms of desire. What is desirable is often different to different people. It may be a composite of tools and toys, of usefulness and play, etc. This is an outcome of perceiving the gender and ICT relationship as more heterogeneous than previous research did.

Desire at work

The low number of women in computer science has frequently been described through the metaphor of the shrinking pipeline. Implied in this metaphor is the assumption that the ICT industry is a discouraging place to be for women. The industry is seen as demanding long hours of work, a low degree of flexibility, a dominance of men's networks, and low visibility of women.

However, there are observations that points in the other direction. For example, in Norway software companies have regularly topped the list of the most family-friendly companies. Meiksins and Whalley argue in their 2002 book *Putting work in its place. A quiet revolution* that the ICT industry, and engineering work more generally, offers substantial flexibility in working hours and ways of employment – and much more so than for example legal or financial businesses. In a recently published survey of IT professionals in the US, men and women score fairly similar on a lot of questions about the

quality of work (and the scores are quite positive). Women respondents scored higher on questions about ease of entrance into the profession and about job security than men. Men scored higher on a question about love of computers, but the difference wasn't dramatic.²

These findings are consistent with research Vivian Lagesen, Nora Levold and I engage in at the moment. Women working in ICT companies found their work as rewarding as men, and there were no binary differences in terms of what features of the work that was appreciated – although there were some differences in the point of gravity. For example, many men were a bit more enthusiastic about computers and software than the majority of women, but not all men were highly enthusiastic while some women were. A common feature of nearly all the people we have interviewed – men as well as women – was their desire to be useful and to interact constructively with customers.

The point I want to make is not just to show the composite and heterogeneous character of desire in relation to computers and software. I also want to suggest a need to rectify the image that still dominate in research accounts of the gender and ICT relationship, namely that the ICT industry is a chilly place for women.

Thinking from desire

I think we should admit that the research on gender and ICT, as well as policy-making, has been influenced substantially by a fairly moralistic, finger-pointing attitude towards the use of computers. Enthusiasm and playfulness, in the beginning mainly observed with boys, has been looked at with reluctance and perhaps even with contempt. The nerd has never been a favourite.

However, the reluctance and contempt have often been paired with involuntary admiration of the stamina and skill of the nerds, often resulting in a kind of double standards. It is recommendable to be skilled and to work hard, but you shouldn't do it in a playful way. In line with the protestant ethic,

² V. R. McKinney et al. 2008. Women and men in the IT profession. *Communications of the ACM*, 51 (2): 81-84.

you should sweat to get your daily bread. Pleasure is sinful and will harvest pain.

Good protestants also repress any desire, but to be honest, I don't think present-day engagement with computers resonate fairly well with traditional protestant ethic anyway. Thinking from desire, and doing so in an analytical way, offers the possibility to navigate the issue of computers and education and the gender and ICT relationship in a better way. The main take is to accept greater diversity and heterogeneity and thus implement a more diverse bag of strategies.

Related to the topic of the conference, I'll allow myself three brief concluding assertions. First, I believe that the main contribution to be made by schools to remedy digital divides related to gender is to increase the quality of education with respect to computers and software. We can discuss what increased quality should mean, but there little doubt that insufficient quality in the teaching of computing has the gravest consequences for those already marginalised.

Second, I think there is a need to change the discourse used in policy documents to strenuously avoid the use of gender binaries and consequently, the inherent belief in 'one size fits all' instruments with respect to girls and young women. In particular, there is a need to exorcise gender stereotypes of both women's and men's relationship to computing.

Third, I think there is a potential in identifying desirable properties of computers and work from them in teaching, but I think one also has to be moderate in one's optimism of schools' ability to cater for many of the desirable characteristics young people find fascinating in using computers. For example, it is not obvious that a large-scale introduction of educational software in the format of computer games would actually be an improvement. However, having said that, I think that schools and educational authorities have some way to go to understand the new skills appropriated by many young users of computers, not the least related to online communication and the development of synthetic communities.³

³ See N. Levold, H. Spilker and K. H. Sørensen. 2007. Mot en "elektronisk solidaritet"? In N. Levold og H. Spilker (red.), *Kommunikasjonssamfunnet – Moral, praksis og digital teknologi*. Oslo: Universitetsforlaget, p. 266-280.

