Cappuccino, Community Technology in the Margaret

by Ellen Balka

L'article donne un aperçu de certaines des questions soulevées par Margaret Benston et d'autres concernant le développement, la conception et l'utilisation de la technologie dans des contexts sociaux spécifiques comme les réseaux informatisés pour les groupes féministes.

Cappuccino and community

When I was making coffee the other day with one of my favorite luxury items (my cappuccino machine), I recalled how my love of good coffee, community, and technology were nourished frequently for several years over Sunday morning cappuccinos in an East Vancouver coffee house with Maggie Benston and her wide ranging community of friends. As I steamed the milk I drifted into a fantasy conversation with Maggie about the social impacts of home based cappuccino machines in a variety of cultural contexts.

I imagined Maggie saying that having a home based cappuccino machine might adversely affect community, as well as the local economy in Vancouver. I saw myself explaining to her that in Newfoundland going out for a cappuccino might mean a 12 kilometre drive into town followed by a stroll down Duckworth Street only to find out that all five machines in the commercial sector of the province were broken down and that we lacked an infrastructure to support the maintenance of that technology. We would discuss how a mutual friend's daughter, Lucy, was employed as a mobile cappuccino repair person, and how, in Vancouver that was a male dominated (and relatively well paid) occupation. After telling her my tales of friends visiting for coffee and a view in Newfoundland she would understand my cappuccino machine as an appropriate choice in my cultural context—as a community building technology. The conversation would then turn to the broader issue of infrastructures required to support activities that involved technology (nearly everything), and the latest in terms of who was doing what to support community-based uses of computer networks for social change. As I steamed my milk, I was back in our old East Vancouver cappuccino house watching Maggie write notes about expertise on a napkin as we talked. I was jolted out of my imaginary conversation and into a moment of grief when my steamed milk began to exceed the height of my glass.

Shortly after Maggie's death I defended my doctoral thesis. After working under Maggie's supervision as a Master's student, and as a doctoral student until her ill health prohibited it, her absence at my Ph.D. orals loomed large. We had worked together extensively over a period of six and a half years on several projects related to women and technological change, and the use of computer networks by feminist organizations. Towards the end of my orals one of my examiners prefaced a question by saying "this is the question Maggie would have asked had she been here." As I struggled to maintain my composure in the midst of my sense of loss, I was comforted to know that Maggie's questions endured in the minds of many. In responding to that question during my exams, I provided an overview of a recently funded research project, and began to outline some of the issues related to a political economy of women's use of computer networks.

Technology in the women's community

For Maggie, the technical and social dimensions of technological change were inseparable. She was able to maintain an overview of multiple technical and social processes and their interactions with one another that allowed her to formulate both provocative questions and useful educational techniques. For example, in our preparation for a hands-on computer networking workshop for a women's organization, we were reflecting on our past successes and failures. One of the problem areas we had identified was confusion that arose when novice network users placed a call from a personal computer to a computer located beyond a local calling area. Under certain circumstances this required the user to type the appropriate commands for four different software packages in the space of about forty-five seconds. The likelihood of this happening without error was very low. When users encountered difficulties at this stage they often became frustrated, flustered, and disinterested.

Simply telling people what commands to type was inadequate, as it did not encourage an understanding of the process, or encourage self-reliance among novice users—instead it maintained users' reliance on us as technical experts. In addition, if something failed, users were left staring at a screen with few clues about which commands to type when. Presenting the theory prior

to hands-on use was overwhelming, as it involved an explanation of technical aspects of computer telecommunications, the structure of the long distance data carriage industry, and general theory about computers. In addition, the theory divorced from both context and use threatened to put would-be users to sleep. Maggie began scribbling and charted out a road map of the process on the left side of a piece of paper. On the right we added the related commands for each programme users encountered along the way. This allowed us to provide an "aerial view" of the larger process, and, at the same time allowed users to quickly identify where in the process they had gotten lost. We were able to get people with no prior experience with computers through the most complicated steps of accessing a computer network in a very short period of time, with a conceptual understanding of what had just occurred. With this accomplished, users were quickly able to send one another messages. After doing that for an hour or so, our neophyte users were filled with curiosity about how it had all happened and what it had entailed. They were more likely to become engaged in the process of technological change.

Maggie had been able to ascertain that a necessary condition of use for inexperienced computer network users was that the technology remain as transparent to the users as possible. Through examination of her own role in social change movements as an academic, and as a result of observing numerous difficulties experienced by non-profit organizations that relied on 'outside expertise' for computer system management (rather than developing knowledge of computer systems in-house), Maggie's critique of scientific expertise evolved. (See for example Benston, 1986) For Maggie, a critique of scientific expertise was an important step in developing a critical perspective of technology. Although one can certainly develop a critical stance towards technology in the absence of a critique of scientific expertise, (see for example Downing *et.al.*), to do so diverts attention away from the social relations of science and technology, and the notion that the social relations governing how science is practiced and how technologies are developed results in a social bias in the development of technological systems. (See for example Benston, 1988; Noble) Making technology transparent to users by simply presenting them with a list of appropriate commands to type (as users often desired initially), and/or failing to address the role of scientific expertise in teaching about technology reduced the likelihood that users would engage in the process of designing technologies they utilized. Or, if they did engage in a participatory design process (Benston, 1990), they were unlikely to challenge the class-based nature of the development of technological systems. Maggie's willingness to examine her personal experiences as a scientist as part of a larger political process contributed to her social and political analysis of technology.

Technology as community process

Maggie conceptualized technological systems in the broadest sense possible. In her article "Women's Voices/Men's Voices: Technology as Language" (1988), she argued that the computer networking systems that are widely available are not the only ones that could have been created, given existing levels of technical possibility. Building on earlier work by Dickson she pointed out that technology can "be seen as a 'language' for action and self-expression with consequent gender differences in ability to use this language." (14) Other computer networking systems might have been developed had system designers had different objectives. In the case of technology, one must use the available tools and techniques in attempts to carry out particular actions, and actions are constrained by the technologies that are available. The 'language' for social action provided by available technologies must be understood "as one that imposes limits on what can be 'said.'" (19) As new technologies are developed, our vocabulary for action changes but does not necessarily expand.

Working towards the end of producing technologies that support a wider array of social actions, particularly with respect to women, Maggie searched for methods that would allow her to de-privilege herself as technical expert, and to empower lay people to create technologies consistent with a wider range of social values than those available to us today. She worked from an assumption that science should be done "by the people," rather than "for the people." (Benston, 1986) After struggling for several years, she recognized that an important step between science for the people and science by the people was "science with the people." (Benston, 1990) Participatory design techniques (where users articulate the needs a technology should meet, and system designers perform the technical work required to embed users' needs into working technological systems), though often lacking in analyses of gender, provided Maggie with a great deal of hope.

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specifically addressed the needs of women as user/designers, Maggie would be pleased to know that women's groups across Canada are still interested in the use of computer networks in the context of social change, and, perhaps as a result of disappointing early experiences with the technology (Assheton-Smith), there appears to be a greater acknowledgment that it takes time for women to use computer networking technology responsibly. Perhaps we are beginning to recognize that making technology is a community activity and, that it requires the same kind of attention to detail and sensitivity that building a strong sense of community in the women's movement does.

Technological change is about community. As Franklin points out, technology helps order our social interactions.

> Technology has built the house in which we all live. The house is continually being extended and remodeled. More and more of human life takes place within its walls, so that today there is hardly any human activity that does not occur within this house. All are affected by the design of the house, by the division of its space, by the location of its doors and walls. (11)

In electing to use certain technologies, we are, often unconsciously, electing to order our lives in certain ways. In utilizing computers in the women's movement, we are imposing forms of work organization (embedded in the technology) on our often fragile organizational structures. Technology often changes how we interact at work, and thus how we, as individuals, see ourselves in relation to wider communities, such as our workplace cultures. Although as a culture we have recognized that community has an explicitly human dimension to it, we are only just beginning to recognize that community also has an explicitly technological dimension to it.

Building technological systems as group process: the next step

Linn, along with Benston (1989) and Suchman and Jordan argue that there is more to technology than hardware. Along the lines of Bush's analysis of technology, Linn sees technology as a cultural product. Linn makes a useful distinction between living labour (people) and dead labour (tools and materials) to illustrate her claim. She points out that Braverman and his followers have paid little attention to the relations between living and dead labour, other than to emphasize the oppressive ways that capital's technology acts *on* living labour. The critical point that Linn makes in her discussion (a point taken up by both Benston (1986 & 1989) and Suchman and Jordan), is that only living labour can set purposes, reflect, reconsider, etc., because only living labour (consciousness) has the power to respond to the variabilities in the social world. Linn points out that the network of relations in which the technology (a cultural product) is embedded are neglected in favour of an emphasis on dead labour. She reminds us that the political consequence is again the unchallenged acceptance of the physical efficacy of the product. Linn makes a point that Maggie knew well: that an emphasis on the physical efficacy of the product can still occur in an alternative setting.

Linn discusses in detail the problems that result when a good idea is seen as a starting point and project development progresses solely in terms of the physical product. Products are emphasized over processes and it becomes difficult to keep people in the foreground. Technological change is conceived of as merely a matter of different design and new production techniques, rather than as a consequence of changed working relations. The real work (the efforts of those involved in setting up a particular project, in terms of organizing the work, ensuring that everyone has information, etc.) is ignored. A focus on the physical product reinforces the apparent rigidity and immutability of technical work.

Suchman and Jordan argue that most technologies are designed at a distance from the situation of their use, and that this leads to an inevitable gap between scenarios of design and circumstances of use. They argue that the development and implementation of technological systems should be characterized by a continuous or rolling process, where design is only fully completed in use, rather than a linear design process that sees system development and implementation as separate, discrete steps. Suchman and Jordan also argue that both the design and use of technology also involve appropriation.[1] The gap has to be filled by the user, as the technology is interpreted with respect to local concerns and circumstances. It is in this sense that the design of technology is only fully completed in the use of that technology.

Suchman and Jordan suggest a strategy for system development that revolves around concepts similar to those introduced by Linn. Where Linn discusses the failure to look at the relations between living and dead labour, Suchman and Jordan in a sense are advocating this as a starting point in the design process of technology. They introduce readers to the product and process perspectives on software design.

The product perspective of software design considers the interaction between a computer program and the environment within which it exists, as prescribed by the program's design. In contrast, the process perspective on software design suggests a dynamic relationship between a program and its environment. This latter view demands that we both appropriate women's knowledge as part of the design process, and develop new types of relationships between system designers (living labour) and the product they develop (dead labour). In women's organizations, this would require an iterative design process

that focuses not only on the potential uses of computer networks within an organization, but also considers the fit between design options and the group's desired communicative goals, and applies a feminist analysis to the processes surrounding the design of the networking system. Benston's (1989) work proposes a model for approaching interactions that must take place between system designers, their products, and system users. The part of the world we take into account when developing programs is composed of human work, learning, and communication, that are assumed to be subject to continuous change as designers and users change their relation to the technology. In this view people, social relations, and the applications of software are given primacy.

Conclusion

Maggie died before she had an opportunity to develop a blueprint for action that combined her experiences with insights by Linn and Suchman and Jordan. Had she lived, I suspect she would have developed such a blueprint for social action over a Sunday morning cappuccino in an East Vancouver coffee house, and articulated it in its first draft on the back of a napkin. Perhaps she would have seen the introduction of computers into women's organizations as an opportunity to clarify issues related to organizational structure and work practices in women's groups, which is, by its very nature, a group process. Perhaps she would have looked to participatory theater as a process that could bring women together to discover for themselves the points made by Linn and Suchman and Jordan.

Ironically, in the year after Maggie's death, we were able to obtain funding to investigate work practices and organizational issues in Newfoundland women's groups, and the accessibility of computers to those groups. Our funding also permitted us to begin investigating the impact of telecommunications policy on the accessibility of computer networking resources to these groups. Finally, we have for the past year been working with a community advisory committee that is helping us develop a participatory design strategy to increase the accessibility of computer resources to them.

In the years I spent working with Maggie, I learned a great deal about the process of change, and particularly about building community. In her absence, I can only imagine the approach she might have adopted in her efforts to bring the design and implementation of technology into the everyday activities of women's groups.

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[1]This is inevitable, they claim, because to some extent technologies have to be designed for unknown users, in unknown circumstances.

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