

THE MYTH OF COMPUTER LITERACY

Margaret Lowe Benston

"La nouvelle technologie est là, et nous devons apprendre à vivre avec elle" nous dit-on. C'est très bien de familiariser les femmes à l'informatique, mais est-ce suffisant? Ces connaissances sont nécessaires pour que les femmes aient confiance en leur aptitude à critiquer la technologie existante et le pouvoir derrière elle: or, la familiarisation à l'informatique est conçue pour apaiser les inquiétudes, non pour donner contrôle. La technologie pose en effet la question du pouvoir dans la société: par qui a-t-elle été conçue, développée, introduite, et pourquoi? Une des forces influentes majeures, dit l'auteure, fut le capitalisme: l'usage des machines et des techniques a été développé pour créer ou accroître les profits. Ce dont nous avons besoin, alors, ce n'est pas seulement de familiarisation à l'informatique, mais de démystification de la technologie.

The rapid introduction of micro-technology has been accompanied by an equally pervasive technological determinism. We are told over and over that "the new technology is here and we must learn to live with it." The implication is that this new technology is impossible to resist or to change. Anyone who questions the spread of computers and computer systems is accused of being a neo-Luddite (an ignorant protester against technological advances) or of being anti-technology. The new dogma is that we must all learn computer skills, we must become "computer literate" to prepare ourselves for the new "Information Age," and a wide variety of workshops, courses, and programs have sprung up to provide such skills.

It has been a widespread assumption on the part of many who are concerned about women's issues that computer literacy is especially important for

women. There are two different arguments used to support this assumption. The first one focusses on women and work. As Heather Menzies's important book *Women and the Chip* (Montreal, 1981) and the Labour Canada report *In the Chips* (Labour Canada, 1982) indicate, women are likely to be hard hit by job loss and job displacement as computer-based automation is introduced into the workplace. There is a widespread assumption that many, if not most, of the new jobs that are created will be in areas that are computer related. Since women have been channelled out of scientific and technical fields, it is argued that they will need extra effort to catch up so that they can compete successfully for the new jobs. A second argument for computer literacy comes out of the view that the social effects of microchip technology will be so pervasive that it will be a dominant social force in any future society. Since women are handicapped by their exclusion from scientific and technical areas, they must learn about this new technology and participate in it if they are going to have any say in the new computer-dominated society. There are, however, a number of problems with both the assumptions made and with computer literacy as a priority for women.

It seems clear that there will indeed be major effects on jobs, especially women's jobs. In addition, women are likely to be affected in other important ways. As consumers we will be especially hit by the self-serve trend (Ursula Huws, *Your Job in the Eighties*, London, 1981), and as users of public services we will be affected by computerization of public-service and governmental functions. As citizens we will be affected generally by the increased potential for surveillance, invasion of privacy, and

social control. The other parts of the arguments given above are considerably shakier, however.

For one thing, the idea that most of the new jobs created will be in computer-related or high-tech fields is not realistic. Yes, some jobs will be available in computer repair and maintenance. But these will not represent nearly enough jobs to replace the ones that are being lost (Benston article, 1984). It is true that many, if not most, of the jobs of the future will indeed involve computer use, but this is something quite different from working directly in some computer or computer-related industry. Bank tellers, telephone workers, and retail clerks have jobs now that "involve" computing. The women in these jobs do not even stand in the same relation to a computer as a driver does to a car – at least the driver can tell the car where to go. In business computer systems, the worker/user has extremely limited terms of interaction with the system, terms that are predefined by someone else.

The whole idea of "computer literacy" is an extremely fuzzy one at best. It is a catchphrase that implies as a universal goal some knowledge or skill in analogy with literacy itself. But only rarely does anyone try to say what this might mean in practice. Does it mean being an "intelligent user" in the sense of understanding how to use various applications? If so, why? The software and the system configuration are specialized from application to application. Knowing something about programming or being an intelligent user of a word-processing system will not help us be a better retail clerk using a point-of-sale terminal, for example. Sometimes the idea seems to imply simply becoming familiar with the capabilities of a personal computer. In that case the

question is either whether we have uses for such a computer or whether these skills translate into job skills or into ways of coping with large-scale bureaucratic uses and abuses of such systems. For many people, the answer to these questions is clearly no.

Both of these approaches imply getting enough familiarity with the technology so that we are not frightened by it. This is, in fact, the major content of much that goes on under the name of computer literacy. It is certainly the main reason why business and government are so keen on the idea. The goal, stated or unstated, of the majority of computer-literacy programs is to reduce anxiety about possible negative impacts of the new technology by increasing familiarity with it.

There are still a couple of other possible things that computer literacy might mean. Following from the concern for jobs, feminists seem to see computer literacy as at least the first step toward a mastering of this technical field. The hope, as mentioned above, is that women will then have a chance for the jobs that will be created in computer-related industries. Aside from questions about actual numbers of them, what is needed for most of these jobs is not "computer literacy" but full technical training. Additionally, as a wealth of feminist material shows, the problems for women in technical fields are not simple ones of "training" or "literacy" (see in "Further Reading," SCWIST, 1983; IJWS, 1981; and WSIQ, 1981). The strategy proposed is also a completely individual one and ignores everything that we have learned about the need for working together.

A final possibility is that computer literacy means obtaining enough information about the capabilities of this technology so that we can begin to have some say in the way it is to be used. To some extent this is true. This is a necessary but by no means a sufficient condition. The assumption that it is technical know-how that gives us control over technology is a very dubious one.

It is this issue of *control* that is central to our understanding the limitations of the notion of computer literacy. Such programs give the illusion of control but in reality present the technology as a given and ask people to learn to adjust to it. In none of its manifestations does computer literacy imply an exami-

nation of why the technology is being introduced and by whom. Nor do such programs explore the ways in which the technology itself could or should be changed. Though the programs arise out of the perception of a problem, the solutions posed are completely individual. Overall, computer literacy simply supports the status quo.

If we are to have any real say in the future uses of technology, we must have a critical understanding of it as a social as well as a technical phenomenon. Technology is never simply "technology." There is always a surrounding aura of ideology and expectation. More importantly, there is a basic question of *intent*. Who conceived of the technology, who designed it, who introduced it, and why? These are all questions about who actually controls

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the technology. Any given technology comes out of a complex of social circumstances and not only shapes society but is itself shaped by it. One of the major shaping forces of the technological base of our own society since the Industrial Revolution has been the imperatives of capitalism. By and large, machines and techniques have been introduced to create or enhance profit.

The Industrial Revolution meant the introduction of new machines as well as a new organization of production. The machines and techniques were introduced directly to increase productivity or to give management more control over the production process and over the workforce. Deskilling and routinization of jobs were often consequences of mechanization and increased division of labour. They were made possible by

management's increasing understanding of the details of the productive process. This understanding was the precondition for the further mechanization and later automation of the work process. Increasingly the knowledge that the producers had about the work process has been transferred to and embodied in the design of machines. Computers are the logical culmination of this historical process. Thus microtechnology and computer-based automation have been introduced for the same reasons that other industrial machines have been introduced. In this sense, they can be understood as though they were machines like any other.

It is clear, though, in important ways, that a computer is *not* just another industrial machine. Because of the amount of human knowledge embodied in these systems, computer-based automation can replace vast amounts of human labour in nearly every sphere of economic activity and in every area of employment, with large-scale unemployment as a likely result (See Benton, 1984, and Jenkins and Sherman, *The Collapse of Work*. London, 1981). The growth of large data banks, both in the workplace and in government, coupled with the growth of computer communications networks, has opened up new possibilities for information transport and sharing. This means that the possibilities for surveillance and control from some centre are vastly increased.

The argument is often made that the "new technology" is in fact neutral and that computers can be used for anything. From this follows the general "social" argument for computer literacy sketched out at the beginning. That is, we need to understand the potential for both good and evil so that we can make intelligent decisions in order to avoid the worst problems and obtain the maximum benefits. Such a view is far too simplistic, however. Technology is *not* neutral and the microtechnology-based systems of today would not be suitable for a society in which profit and control over workers were not major goals. At the level of chips and cathode-ray tubes, we do have an underlying technology – the bits and pieces as it were – that is relatively neutral. These pieces could in fact be put together in widely divergent ways. However, we must understand that the completed hardware components plus the way in which those components are organized,

plus the crucially important software, must be included in the description of the technology. Even individual micro-computers, relatively general-purpose machines that they are, reflect choices and limitations. At the level of business or institutional computer systems there is no question that we are looking at a technology that is specific to this social and economic system. In terms of major social effects, it is the whole computer system or the whole factory system that constitutes the basic technology – not a single robot or a single computer. For example, it only takes a moment's thought to realize that the technology that supports the present banking system reflects quite clearly present social structures.

There are few alternatives to point to where technologies have been developed to reflect different assumptions about the world. It is possible to imagine, however, that tools and computers could be designed or selected by the workers themselves to suit their own needs. Work could be organized so that users programmed their own machines, did simple repairs, and so on. This is in fact the way that many small-business users approach personal computers – they do some research to see what hardware might be suitable. They learn what packages and applications programs are available and then decide which systems offer the functions they need. They may learn enough programming to develop special systems or collaborate with a programming specialist to design them; they operate the systems themselves and learn to deal with minor software bugs. In short, they treat these systems as personal tools. The impossibility of imagining a secretary or mill worker approaching the technology in the same way has to do, obviously, with the degree of control that such workers have over their work.

Technology and, especially, computers raise questions of power in society. In a distorted form, this has been recognized in popular images of the Machine ever since the Industrial Revolution. This is not surprising, since it was then that machines first began to embody capital's control over human labour and human freedom. Technological determinism has been a strong component of these popular images, and it served management interests very well with the underlying assumption that the power is in the machine and not in hu-

man hands. As Joseph Weizenbaum points out (*Computer Power and Human Reason*. San Francisco, 1976), the idea of the computer, with its connotations of an artificial intelligence, has become the most recent and most powerful form of such social imagery. The Machine of this modern metaphor is one of immense power, representing a force beyond human control. The Machine carries its own inhuman logic within it, and its impact on society is a consequence of its own laws of motion, not of human choice.

We are now being told on all sides that we are entering the Computer Age – in terms of the Machine metaphor, this implies that the Machine is now taking control of the society, with all of the deterministic, antihuman logic that is implied in that. This, not unnaturally,

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causes a great deal of anxiety centred on the new technology. In fact, there does exist an inhuman, antihuman logic that dominates this society and that controls social choices as well as much of our lives. This is not a machine, however, abstract or real, but is the logic of the people who own and control the economy. They hold and exercise the bulk of power in the society, and their logic is the logic of profit and control; it is a logic that sees human beings as means to an end, not as ends in themselves. The men who hold this power generally contrive to hide it behind a parliamentary structure, but since people are not blind, we understand, at a minimum, that there is something out there that we are not in control of. Increasingly, that something is seen as the new technology.

In essence, what computer literacy promises is control over the Machine. By learning to use computers we will come to control them. Such a promise is illusory and is simply a panacea for anxiety and feelings of powerlessness in the face of the technology. Not surprisingly, men take more easily to computer literacy than women do. In part this comes out of the legitimacy of men's striving for power and control, even if such control is illusory. Women are further handicapped by anxieties around using machinery that is sex-typed male. This does not mean a plus for women in escaping the conditioning into acceptance that goes with standard computer literacy, since it comes from a position of weakness rather than strength. Men get an illusion of control, while many women reject any attempt at all to understand or control this aspect of society. What is needed, for both men and women, is not computer literacy but demystification. As feminists, we need to develop our own educational tools. These should simultaneously place the technology in its social context and provide a basic technical understanding of both present and alternative technologies. Women do need enough computer knowledge to be confident in their ability to be critical of present technology and the power behind it. Conventional computer literacy is, unfortunately, not the way to get such knowledge.

Further Reading:

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