

Computer Literacy and the Cybernetic Dream

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Technological Literacy has been placed on the agenda for a second year at this meeting of educators, engineers and scientists. This year, the theme is technology and the imagination. Imagination works day and night. I want to speak about the imagination in daytime when people are immersed in neon lights. Only indirectly will I refer to that mini-competence on keyboards, at switches and in face of graphs which makes everyone feel a little bit of a hacker. As useful as it might be, I look at this kind of pseudo-literacy mainly as a condition to keep your sense of humor in a world that has been programmed. I will deal with the machine and its cybernetic logic only insofar as these induce a vaguely dream-like mental state. I am concerned about how to keep awake in the computer age.

It is helpful to distinguish three ways in which a technique affects the human condition. Technical means can be tools in the hand of the engineer. The engineer is faced with a task and for it selects, improves and applies a tool. In a second way, tools have a way of affecting social relations. A telephone-society engenders something new, still called 'trust' - toward people whom you address but cannot face. Finally, all tools tend to be themselves powerful metaphors which affect the mind. This is as true for the clock as it is for the motor or the engine; it is as true for the page covered with alphabetic signs as it is for a string of binary bits. The first two effects of tools, namely the technical use and its fallout on social structure, I want to bracket for today. I want to focus on cybernetics as a dominant metaphor, I want to speak of the computer as a potentially mind-boggling device.

However, before I get to this subject, I want to clarify one more point: I am not speaking about this ominous power of the computer in a general, world-wide, way. I am not saying what the computer as a metaphor does to Japanese children who have studied cangi-ideograms three hours daily for eleven years. I want to orient our discussion on the fit between the cybernetic metaphor and a particular mental state, the characteristically European, Western mental space which over a thousand years has been shaped by the alphabet and the alphabetic text as a dominant metaphor. I suggest this restriction for three reasons: first, because what I know about is mainly history; second, because I am studying the function of alphabetic notations, insofar as they have been considered as generators of post-medieval typically European unexamined axioms; and, thirdly, because I want to invite you to discuss with me the impact of the computer-as-metaphor not as a sociological, but as a literary and historical phenomenon.

Classical science has been created by people who recorded the sound of words by which they discussed nature. It was not created by Chinamen who for millennia have graphically expressed unsounding abstractions. Until recently natural scientists were, above all, literary men. Modern science therefore is an outgrowth of the literate mind, in the sense in which this term has been used by Milman Parry or Walter Ong. Turing's universal machine appears as a singularity within this mental space during that fateful year 1932/1933.

I propose that we explore how the cybernetic metaphor proposed by Norbert Wiener has affected the mental topology of the alphabetic mind. I want to describe the disembodied mode of perception which corresponds to the computer boggled mindstate in contrast to the perception characteristic of the literate mind.

For this mode of conceiving and communicating among people who are high on the cybernetic metaphor, Maurice Berman has coined an excellent term. He calls this state 'the cybernetic dream.' Many of you will know Berman from his

'Reenchantment of the World' published in 1981. He is now working on a new book, on the 'Body of History'. An article published in the Journal of Humanistic Psychology gives an attractive foretaste of what is to come.

Berman recognizes the dimming of those implicit certainties by which the classical literal mind had been shaped. He calls attention to many attempts to recognize alternative modes of consciousness and observation. Most of these - in one way or another - place themselves under the umbrella of 'New Age' and, according to Berman, most of them have one thing in common: they encourage their followers to abandon themselves to the cybernetic dream.

Berman, in this article, comes to this conclusion by examining a set of North American authors who have recently been influential in the general public and tend to pose as disenchanted scientists. He recognizes the enormous difference in language, logic and style between Douglas Hofstadter, Frank Capra and Ken Wilber, Jeremy Rifkin or Rupert Sheldrake. Deftly he sketches their respective petterms: holographic paradigms, morphogenetic fields, real time, implicate order. And convincingly he argues that all of them rush into the same trap into which even Bateson ended when he reduced the body - towards the end of his life into part of a monistic, mental process.

All of these authors at one point claim to offer an epistemological approach to reality that would be an alternative to the mechanistic, empiricist, value-free consciousness which each one of these authors ascribes to 'current science' or 'the scientific establishment.' In fact, however, according to Berman, these authors do nothing of this kind. Each of them, albeit in different words, interconnects another set of concepts that are related to information theory and thus creates a purely formal, abstract, disembodied system of reference which he identifies with what is going on in his own mind. This state of mind, for Berman, is best called the 'cybernetic dream.' It puts the mind into a state which can be accommodated to any situation at all. For Berman, the cybernetic dream brings the logic of 300 years of mechanis-

tic science to its full fruition. I would rather say: it represents a 'singularity' - in the sense in which a black hole is a singularity in time-space.

Berman tells the story of a friend called Susan. It so impressed me that I cannot but elaborate on it. Susan teaches high school in Northern Florida. Many of her students have home computers. When Susan assigns a paper to these students, they run off to their machines. They feed it Susan's key words, have it retrieve materials from data banks, string these together and present them to the teacher as their homework. One afternoon, Frank, one of these students, stayed on with Susan after class. The paper that week had been on drought and hunger south of the Sahara. Frank wanted to show her more of his printouts, and at one point Susan interrupted him. She said, 'Frank, tell me, what do you feel about this?' Frank stared at her for a moment and then replied: 'I don't know what you mean.' At this moment the abyss between Susan and Frank comes into view. Michel Foucault would have spoken about an epistemological chasm. Let me sketch her mind and his.

For Susan, a statement is an utterance; behind each utterance there is somebody who means what she says. And further, Susan cannot mean anything without feeling how this meaning is embodied. When she spells out 'hopeless hunger' she senses something, which she does not when she operates on '33.' Therefore, for Susan, the words that make up a sentence are like the planks of a bridge to the feelings of another.

For Frank, words are units of information that he strings together into a message. Their objective consistency and denotational precision, not their subjective connotations, count. He operates upon abstract notions and he programs the use of data. His perception is locked into his head. He controls redundancies and noise. Feelings and meanings would arouse anxiety, terror and surges of affection, and he keeps them low, he keeps his cool. The text composer is the model which imprints his mode of perception. He conceives of his senses as 'perceptors' and of his ego as a proprioceptor.

Susan (now taken as an ideal type) is a perceptually embodied self. Her utterances surge from the mass of flesh and blood, from the forest of feelings and meanings which engulf everything she has said. She is a teacher, because she has disciplined meanings and feelings without downgrading them. With great pains she has trained her inner Descartes and her inner Pascal to watch each other: to balance mind and body, spirit and flesh, logic and feeling.

Frank is, at this moment for me, the emblem of the opposite perceptual state. He has detached himself from the morass of feelings. He has learned how to take off, to leave the dense atmosphere behind and operate in free space, without gravity. He has hooked on to the computer and he has been caught in the dragnet of operational thinking. Turing's formula has induced for him the cybernetic dream. He can coast above the Sahel, view the parched Earth, the dying camel, and register growing despair and hostility. His mind is a camera which does not distort those signals it does not let in. He wants Susan to grade the takes that he has composed into a 'text.'

Susan and Frank are both persons. They are responsible for the mental state in which they are. Susan can steer her way between romantic sentimentality and critical lucidity, between sloppy and sensitive choice of connotations, choose the traditional lineage of authors into which she wants her metaphors to fit. When she speaks she is using words that have been written, and thinking for her is a way of silently spelling things out. This constant reference to the alphabet makes her different from the preliterate, but also in a very different way, from Frank. Frank, too, is responsible for what he does. He can use the cybernetic metaphor for what he does when he speaks as an analytic tool which misses more than it models. He can use it as a joke. Like Fromm when he speaks of psychic plumbing, Frank can refer to shit-in, shit-out. But he can also become sloppy and let this metaphor swallow all others, and finally move into the state Berman calls the cybernetic dream.

As the two mind-sets confront each other, both can harden into ideologies. I have known several Susans for whom literacy has become an anti-cybernetic ideology. They react to every reference to computers as fundamentalists react to communism. For these anti-computer fundamentalists a trip through computerland, and some fun with controls, is a necessary ingredient for sanity in this age. Those of you who study computer literacy sometimes forget its importance as a means of exorcism against the paralyzing spell the computer can cast. But I know many Franks who, under this spell, have turned into zombies, a danger Maurice Merleau-Ponty clearly foresaw almost thirty years ago. He then said - and I quote - that 'cyberneticism has become an ideology. In this ideology human creations are derived from natural information processes, which in turn have been conceived on the model of man-as-a-computer.' In this mind-state, science dreams up and 'constructs man and history on the basis of a few abstract indices' and for those who engage in this dreaming 'man in reality becomes that manipulandum which he takes himself to be.'

When I earlier described Susan and Frank standing opposite each other, separated by an epistemological chasm, I avoided saying that they 'face' each other. To speak with Merleau-Ponty, Susan's body is the 'soil of the sensible which emerges with every word and gesture,' and Frank's body is the defaced artifice of the 'information machine.' The two cannot face each other, and to 'interface', Frank would have to pick another of his own ilk.

When I think of the glazing which the screen brings out in the eyes of its user, my entrails rebel when somebody says that screen and eye are 'facing' each other. A verb for what happens there had not been coined when Merleau-Ponty wrote in 1959. The verb was created ten years later by McLuhan, and within a year 'to interface' was current in psychology, engineering, photography and linguistics. I hope that Susan is a friend who is seeking Frank's face. Perhaps Susan sees her vocation in seeking Frank's face.