

become ever more bulky and retrieving information will become an increasingly awkward and vexing task as the population increases and as the amount of information about each member of the population increases for the reasons we have discussed. The incentives to put this information into computer memories will thereby increase. But if history is recorded on tapes, in magnetic codes, and on molecular films, the definition of what was will become ever more dependent on how the machine has been programed and what it is able to retrieve from its memories. As respect for and dependence on the computer increases, it is likely that respect for and dependence on fragile and "ambiguous" paper records will decrease, lessening the ability of the individual to establish a past history different from that jointly provided by the programmer of raw data and the interpreter of processed data. There will be fewer opportunities to derive a public consensus on what the data "is," for there will be no public language in which the primary data will be recorded through which the public can verify the meanings and facts of the records. Robert Davis of the Systems Development Corp. compares this situation to the time when the Bible was interpreted to the illiterate, and what the Bible said and meant depended exclusively on what those who could read claimed it said and meant.⁴

On the other hand, centralization of private information and its preservation in computer memories may decrease illegitimate leaks of that information. Those who will have access to personal history will see much more of it than was usually the case when it was contained in printed records, but fewer curious eyes will have knowledge of any part of the private history of the individual.

PERSONAL FREEDOM

Now let us look at a few possible confrontations between the freedom of the individual and the computer.

There is one form of technology tied to the computer which today increases freedom for some and which may in the future decrease it for others. This is the technique of telemetering information from tiny sensors and transmitters embedded in the human body. Right now, one form of these devices keeps recalcitrant hearts beating steadily. In a few years, in variations of already existing experimental devices, they will transmit information about subtle internal states through a computer to the doctor, continually or at any time he wishes. Clearly, the lives and liberty of people dependent on such support will be enhanced, for it will provide greater opportunity to move and to live than would be theirs if this information were not so continuously and directly available.

It is not impossible to imagine that parolees will check in and be monitored by transmitters embedded in their flesh, reporting their whereabouts in code and automatically as they pass receiving stations (perhaps like fireboxes) systematically deployed over the country as part of one computer-monitored network. Indeed, if they wish to be physically free, it is possible that whole classes of persons who represent some sort of potential threat to society or to themselves may be required to keep in touch in this way with the designated keepers of society.

It may seem farfetched to suggest that such people might walk the streets freely if their whereabouts and physiological states must be transmitted continually to a central computer. But two trends indicate that, at least for those who are emotionally disabled, this is not unlikely. We are now beginning to treat more and more criminals as sick people. We are beginning to commit them for psychiatric treatment rather than to jail. This treatment may have to continue indefinitely, since frequently a psychiatrist will not be prepared to certify that his patient will not commit the same kind of crime again (as is now required for sexual offenders under psychiatric treatment). At the same time, chemical and psychotherapeutic techniques for inducing tranquil emotional states are likely to improve. We may well reach the point where it will be permissible to allow some emotionally ill people the freedom of the streets, providing they are effectively "defused" through chemical agents. The task, then, for the computer-linked sensors would be to telemeter, not their emotional states, but simply the sufficiency of concentration of the chemical agent to insure an acceptable emotional state. When the chemical agent weakens to a predetermined point, that information would be telemetered via the embedded sensors to the computer, and

⁴ Interview with Robert Davis of Systems Development Corp., in Washington, D.C.