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# THEME

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**A**long with West Europeans and the Japanese, Americans are constantly reminded that they live in “modernized” or “advanced” societies. Although these terms have come to mean many things, it is generally agreed that, minimally, they are meant to identify a type of society in which economic growth is the main goal and the practical application of science is the means. An advanced society can be distinguished from all previous social formations by the self-conscious decision it makes to base itself on scientific knowledge and the continuous technological innovation that that knowledge promises.

Technology is, of course, as old as civilization. Today its novel feature is its planned, systematic development. Technology is no longer the spontaneous creation of an obscure genius, “the Wizard of Menlo Park,” but a product of economic and industrial strategies. Technology has always played some role in warfare, just as it has in the history of medicine. Yet technology is now so firmly embedded in military planning and health services that it is no exaggeration to say that technology *is* military power, and that if the odyssey of Dr. Clark’s artificial heart is any harbinger of the future, it is rapidly becoming the quintessence of a new form of social power directed not so much at the care of the body as at its reconstruction.

These examples of the penetration of science and technology could easily be multiplied until in the end it would be clear that we have become a society constituted primarily by these two forms. As our ideal of genuine knowledge science is our theory, while technology, as our ideal of useful knowledge, is our practice. The combination has left its mark on how we live, as individuals and as a collectivity. It has made many necessities mere matters of convenience. Many areas of life are now safer, healthier, and more productive. Above all, our powers have been magnified beyond those available to any previous society. “The impossible takes a little longer” used to be a piece of common folklore of technological society. The achievements of science and technology seem to have provided objective proof for the existence of progress, certainly more objective than Anselm was able to give for the existence of God.

During the last fifteen years, however, the gloss has somewhat faded as the unwanted consequences of technology and science have crowded in, giving us our first technological total war in Vietnam; our first serious nuclear accident at Three Mile Island; the first destruction of communities, such as Love Canal and Times Beach, as a result of the disposal of toxic wastes; and the first realization that the health of thousands of workers has been seriously, even fatally, damaged as a result of continuous exposure to pesticides, asbestos, and petro-chemical processes.

Once we lived expectantly, waiting for the latest scientific breakthrough

and technological marvel; now we live somewhat nervously in the shadow of any number of potential, even imminent disasters. Our new society should remind us that technology and science are neither neutral nor independent nor unambiguous. Above all they are not conceived immaculately, and scientists and technologists cannot claim innocence or pass the buck to politicians with the excuse that scientists do not determine how or for what purposes their discoveries will be used. Science and technology have been profoundly shaped and influenced by public choices. Unfortunately those choices have rarely been publicly arrived at—that is, by the public. Unfortunately science policy and technological assessments have been developed in exactly the same political context dominated by corporate money and influence and bureaucratic power as all other policies. Most science is Big Science, subsidized by public funds, occupying elaborate installations, voluntarily at work on evermore destructive, pain-producing weapons, and snugly integrated into the operations of business corporations. Technology, too, bears the mark of capitalism's way of doing things: heedless of consequences, often destructive of settled ways of life, careless of the obsolescence it wreaks upon human virtues and skills, and indifferent toward all forms of action save those that promise further changes in how we shall live.

**D**uring the 1960s there appeared an important body of critical literature on technology and its social implications, notably by Lewis Mumford, Jacques Ellul, and Arnold Gehlen. For reasons that are not altogether clear, that tradition of critical, informed inquiry was interrupted. In the hope of rekindling interest in some of the problems spawned by science and technology this issue of *democracy* was prepared. David Noble's article, the first of a two-part piece, draws on the experience of Luddism to open a debate about how technology has been made to serve a cult of the "future" such that the urgencies of the present are conveniently ignored. One response that has been made is the "Technology Bill of Rights" proposed by the International Association of Machinists, which addresses the impact of new technology on the skills, health, and economic and political well-being of working people. Christopher Lasch explores the influential writings of Doris Lessing and shows a strain that is symptomatic of a certain technological utopianism, which Lessing elsewhere seems to deplore. Max Pfeffer shows the effects of technology upon the structure of the agricultural work force and the future of the family farm. Evelyn Fox Keller investigates the deep structure of scientific hypotheses and finds attitudes and ideology suggestive of themes of domination. And Jean-Christophe Agnew looks at various theories that have elevated scientists and their intellectual brethren into the ranks of a "new class."

*democracy* hopes that these discussions will be the first step toward making science and technology a permanent part of our dialogue.

—S.S.W.