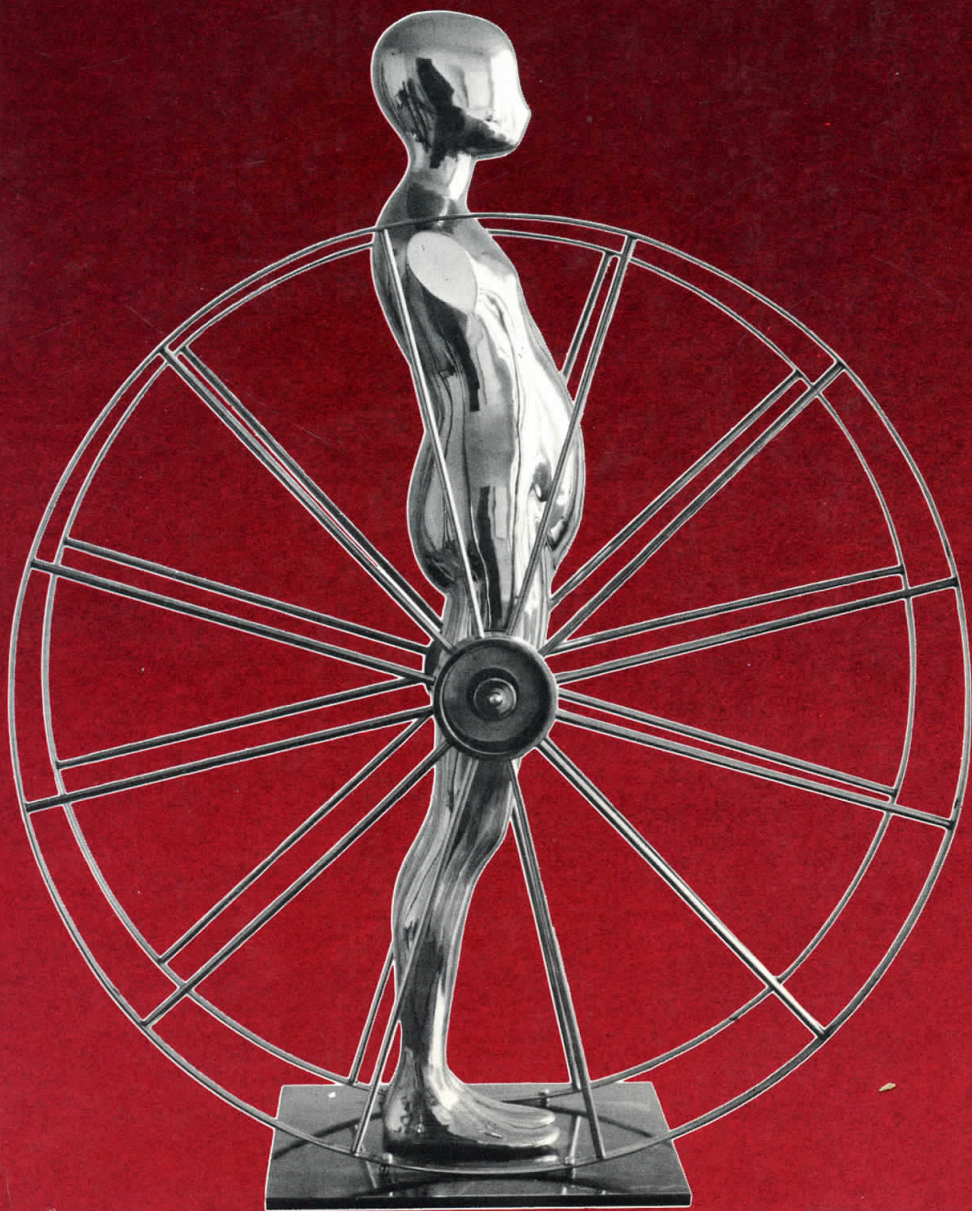


THIRD EDITION

TECHNOLOGY AND MAN'S FUTURE

ALBERT H. TEICH, Editor



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American Association for the Advancement of Science

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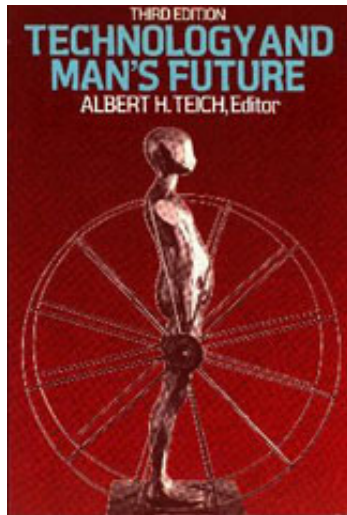
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Technology and Man's Future

Albert H. Teich, editor

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Third edition, 1981



The organization of the third edition, published in 1981, set a pattern that survived nearly 20 years, until the current, eighth edition. The last section, "Reshaping Technology" drew on the growing literature of alternative or "appropriate" technology. Articles on technology assessment were still a major feature of the book, but one of my favorite chapters was an excerpt from Robert Pirsig's classic, *Zen and the Art of Motorcycle Maintenance*.

The third edition is distinguished from its predecessors and successors in at least one other way: it was the only one that also appeared in hardcover, in a special printing sold primarily to libraries.

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INTRODUCTION

Today, more than ever, Americans are ambivalent about technology. In 1978, more than 20,000 people came together in Seabrook, New Hampshire, to demonstrate their opposition to the construction of a nuclear reactor. This nonviolent protest was perhaps the most dramatic antitechnology demonstration in American history. During the same period, George Lucas's science fiction film *Star Wars*, an intensely technological fantasy, opened to record crowds and soon became the biggest money-making film of all time. Although no one has bothered to take a survey, it is probably safe to assume that many, if not most, of the Seabrook demonstrators had seen *Star Wars* and, with millions of others, had been entranced by its range of technological imagination and had viewed it as essentially unrelated to the Seabrook affair.

It is not unrelated. Both Seabrook and *Star Wars* are products of American technological genius. The same kinds of incredibly complex electronic and mechanical systems that are needed to control a nuclear-powered electricity generating plant were used not only in the imaginary star cruisers in *Star Wars* but also in the real state-of-the-art cinematic equipment used to create the film. Yet the very different responses to the Seabrook reactor and the movie epitomize a popular love-hate relationship with technology.

Technology is our curse—the greatest threat to the continued existence of the human race, to say nothing of American civilization. It is also our main hope for survival; doing without it would be unthinkable. Such a divergence of views about technology is, of course, not new. It has been reflected in social criticism, art, and literature for the greater part of the century, and even before. To a large extent, the present-day ambivalence is related to an evolution in the kinds of concerns we have about technology. Ten or fifteen years ago the dominant questions that were being raised about technology were mainly abstract: Is technology “out of control”? Is

it leading mankind inexorably toward a totalitarian society defined by the needs of technology? Previous generations of writers—whether they feared, criticized, or sang the praises of technology—were in many ways overwhelmed by a sense of its unlimited potential. Uncontrolled, autonomous technology was dangerous because it was so powerful; but technology under human control could be infinitely beneficial.

Today the questions about technology are more concrete and specific. They focus on fears of incidents like Three Mile Island, on the potential hazards of recombinant DNA research and genetic engineering, on the threat and promise of “computerized” society, and on the ability of mankind to avert environmental as well as economic and political catastrophe. The present generation of writers on technology seem less concerned with its omnipotence and more concerned with its ability to deal adequately with specific problems. Less concern is expressed about technology “taking over” the world and more with simply finding technologies that work—and work without causing more problems than they were intended to solve.

Reflecting these changing perceptions, the third edition of *Technology and Man's Future* has been broadly reshaped from its earlier forms. The basic concept of the book remains unchanged. Although this is a work about the future, the readings collected here, with a couple of exceptions, do not attempt to tell us directly what the future will be like. Rather, their aim, and the aim of the book as a whole, is to provide the reader with ways of thinking about the future, with an understanding of the forces, particularly the technological forces, that will shape the future, and with a sense of how to deal with these forces.

The book is divided into three major sections. “Thinking About Technology,” the first section, brings together a diverse set of perspectives on the relationship of technology to society. It does not pretend to be completely representative of all the writers or schools of thought; rather, the selections should stimulate readers to question their own ways of thinking about technology. Among the questions raised here is that of a definition of technology. What exactly is the phenomenon under discussion? Everyone seems to know,

more or less, what technology is—that is, until one starts trying to define it. The selections in this section will enable the reader to understand how differing conceptualizations of technology influence various authors' perspectives on the relationship of technology to society.

The second section, "Forecasting, Assessing and Controlling Technology," is policy oriented; most of the articles focus on the need for concerted public action in matters relating to technology. Three of the selections are devoted to the growing field of technological forecasting. Others deal with assessments of the impact of new types of technology in the framework of the policy process; special emphasis is given to the question of public participation in technological decision-making and to a broad overview of governmental mechanisms for handling technology.

The third section, "Reshaping Technology," reflects a growing interest in questioning the assumptions underlying mainstream, industrial technology and in examining alternatives to it. The writers in this section share a belief that simply guiding the development of conventional technologies may not be enough. The time has come to ask fundamental questions about the very direction of technological change and to consider ways that direction might be altered. In a very real sense, the writers here are trying to answer the naive but poignant question Robert Morison poses at the beginning of the book's first selection: "What is all your technology for?"

That *Technology and Man's Future* has been in print for nearly a decade gives me considerable pleasure. It suggests that the study of science, technology, and society has earned a regular, permanent place in the curricula of American colleges and universities. The problems discussed in this book seem no closer to solution now than they did a decade ago; indeed, in many ways they seem more intractable. Yet, if anything gives one cause for optimism, it is that an increasing number of students, in fields from engineering to the arts and humanities, are being given the opportunity to read and think about technology and the future.

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July 1980

ALBERT H. TEICH