

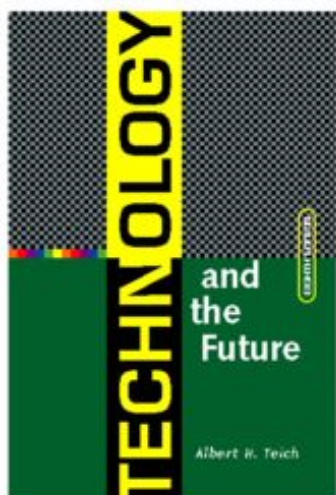


# Al Teich's Technology & the Future TOOLKIT

*Technology and the Future, 8th edition* (Out of Print)

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*Technology and the Future*, edited by Albert H. Teich, is a collection of readings intended for use in courses on technology and society, but also of interest to anyone else concerned with how technology and society are shaping each other and our future.

Published by [Bedford/St. Martin's](#) (formerly the College Division of St. Martin's Press), it has been in print since 1972 and has been used in hundreds of schools and colleges in courses ranging from high school through graduate school.

The eighth edition, the cover of which is shown at left, is no longer available.

**Ordering Information: Sorry this edition is now out of print. The 9th edition has replaced it.**

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January 2001***

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### **Albert H. Teich, editor**

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**Updated January 5, 2001**

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# Technology and the Future, 8th edition

**Albert H. Teich, editor**

## Preface

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“We need to remember that the measure of a civilization is not the tools it owns but the use it makes of them.” So cautioned an editorial entitled “The Limits of Technology” that appeared in the *New York Times* in early January 1999.<sup>1</sup> A more appropriate note on which to open this book is hard to imagine.

The unpredictable consequences of technological change have long been a source of worry to society. Today, however, new technologies and their anticipated benefits are increasingly welcomed, while the possible negative impacts of these technologies are often given little more than lip service. For example, Alan Greenspan, chairman of the U.S. Federal Reserve Board and an individual with unique influence in global economic affairs, credits rapid technological change for the “sparkling performance” of the U.S. economy in the late 1990s. The utopian prospects of accelerating technological change – epitomized by the transformation of the Internet from a tool for researchers into an entirely new global medium of communication in the space of less than a decade – are touted by technologists, entrepreneurs, political leaders, and the mass media. Undoubtedly, we are seeing great technological progress. But is it human progress?

I must confess that I am thoroughly addicted to much of contemporary technology. I drafted this preface on my laptop Pentium while flying back to Washington, D.C., from a meeting in southern California in a new Boeing 777. I am editing the draft at home on my desktop while listening, on the Internet, to music from Joy FM, a radio station in Accra, Ghana. When I am done, I will e-mail the text to my editor. Nevertheless, I am troubled by how little we understand about where the new technologies we see arising on all sides are taking us.

My reflections on technology and the future cannot help but be influenced by the fact that the calendar of the Western world is soon to flip over to a new millennium. Round numbers carry a near-mystical significance in our culture, and through the latter part of the twentieth century, the advent of the year 2000 has provoked an accelerating torrent of reflection, speculation, and soul-searching – not to mention religious prophecy, crackpot rantings and superstition. That much of this torrent relates to technology is no surprise. We are living in an era characterized in a fundamental way by an explosion of technological innovation. Indeed, in the words of the *Times* editorial, technological change “seems like the most salient feature of human culture during the last 200 years.”

Our understanding of technology and its role in society and our attitudes toward technological change have changed substantially over the years. I first conceived of *Technology and the Future*<sup>2</sup> in an era when many Americans looked upon technology with fear rather than excitement. In the atmosphere of social turmoil that gripped the United States in the late 1960s and early 1970s, a large segment of society (at least in the academic world, of which I was a part) saw technology either as a force that was careening out of control or a tool by which those in positions of power maintained their hold over the rest of the populace.

Technologists, who had been lionized for their accomplishments during World War II and the years that followed, were now put on the defensive, and discussions of technology often degenerated into sterile “pro” and “con” debates. I developed this book in the hope that it might contribute to reasoned discussion of the relations between technology and society. I wanted to give students an opportunity to examine the subtleties in these relations and the tools with which to examine the thoughts of some of the most significant writers on the subject and to form their own opinions.

Today, although the problems created by human uses of technology are very much with us, technology itself is no longer demonized as it was in the early 1970s. Indeed, technologies are increasingly woven into the fabric of our everyday lives. Moreover, for large segments of society, concerns about the negative impacts of technology (or technologies), with a few exceptions, are apparently taking a back seat to a broad-based enthusiasm for these technologies and a desire to share in their benefits.

Current predictions of a digital future and a genetic revolution may turn out to be no more realistic than some of the wilder forecasts of forty or fifty years ago – nuclear-powered cars, daily commuting by personal helicopter, lunar colonies, and human control over the weather, for example – which seem hopelessly naïve in retrospect. On the other hand, they may be much too conservative.

The possibilities for technological change are being created by the huge engine of research, development, and innovation that involves governments, universities, and private sector firms and organizations in an increasingly globalized network of knowledge generation. However, whether those possibilities will be exploited and, if so, who will gain and who will lose depends on the structures of human society. Moreover, as the *Times* editorial observes, the sometimes startling rate of technological change may well cause us to overlook the fundamental stability of human nature. There is a tension here that revolves around the need for societies to employ the tools of technology to promote change, not for the sake of change itself, but as a means of advancing civilization according to moral and ethical principles that cannot come from science and technology alone.

This edition of *Technology and the Future* represents the most substantial revision and reorganization of the book since the early 1980s. The literature of technology and society has matured. The concerns of scholars, teachers, and students have changed. While many of the issues that the early editions of this book sought to cover remain important, the context in which they are viewed today is different. I have attempted to preserve the best elements of previous editions while making room for more recent contributions to the literature. To accommodate this blend of old and new, I have organized the book’s twenty-seven chapters into eight sections instead of four as in the past several editions.

Part I, “Thinking about Technology,” is the least changed section of the book. The authors in this part raise the big questions. Is technology good, bad, or neutral? Is it synonymous with progress? How does it influence society? Wendell Berry’s essay, “Why I Am Not Going to Buy a Computer,” which was dropped from the seventh edition, returns to this edition, and “Technological Momentum,” by Thomas Hughes, replaces a different piece by the same author.

The dated, but still very relevant, debate over the role of technology in society between the late Emmanuel Mesthene and John McDermott, a feature of the book since the first edition, has been placed in a separate section, Part II, entitled, “Debating Technology: 1960s Style.” Both the substance and the rhetoric of the Mesthene-McDermott debate present a sharp contrast to Part VII, “Debating Technology: Turn of the Millennium Style,” in which Nicholas Negroponte and Donald Norman, two of the leading innovators and thinkers of the information age, argue over the human-machine interface in the technology of today (and tomorrow).

Part III brings together six authors who challenge the status quo. Their essays discuss alternatives to



contemporary mainstream technology or view mainstream technology from unorthodox perspectives. Langdon Winner's provocative chapter, "Do Artifacts Have Politics?" is new to this edition and replaces a different essay by Winner, while a new piece by Timothy Jenkins adds an up-to-date African-American perspective to the mix, complementing a number of articles retained from the seventh edition. In Part IV, "Envisioning the Future Through Technology," two excerpts from systematic studies of the future, one from 1967 and the other from 1998, bookend two other articles that suggest some of the reasons why technologically-based predictions are so often wrong.

Some of the ethical, social, and human dimensions of two areas of technology that are likely to play a particularly important role in our future, genetics and information technology, are explored in Parts V and VI. Included here are discussions of the exquisitely difficult dilemmas posed by our growing knowledge of molecular genetics and biotechnology – discussion of the prospects for human cloning, the meaning of family in light of new reproductive technologies, and the possibilities for choosing traits in our offspring. Also included are the impact of computers on the organization and character of work, issues of electronic privacy, and a broad-based survey of the ethical issues raised by computers and information technology. Finally, Douglas Coupland's funny, but also serious and thought-provoking article, "Packing Tips for Your Trip (to the Year 2195)," constitutes Part VIII, the coda to *Technology and the Future*.

As in previous editions, my selections are a mixed bag. Not all students or all instructors will like all twenty-seven readings. Most readers will probably love some and hate others; find some fascinating, others tedious. The individual essays do not represent my own views, and I do not necessarily endorse their perspectives. As a whole, however, the book reflects my sense of the important issues in the field of technology and society, a sense that I hope will be useful to others who are interested in these topics.

*Technology and the Future* has been a part of my life throughout most of my professional career. It is gratifying to have watched the growing interest in the study of science, technology, and society in American colleges and universities over the past three decades and to feel that the book may have made a modest contribution to this important intellectual development.

Throughout the life of this book, I have benefited from the interest, suggestions, and helpful feedback from the book's users. This feedback increased significantly with the establishment, in 1996, of the *Technology and the Future* Web site, which includes an e-mail link to make it easier to reach me. I am particularly grateful to the many students who provided their perspectives on the book and asked questions about it, and to the following faculty members who responded to an on-line questionnaire about the seventh edition posted on the Web site: Don Beaver, Williams College; David D. Bradney, Wheeling Jesuit University; Stephen H. Cutcliffe, Lehigh University; Ray J. Davis, North Carolina A&T State University; William H. Dutton, University of Southern California; Thomas A. Easton, Thomas College; Patrick Hamlett, North Carolina State University; Florence Mason, University of North Texas; Brian K. McAlister, University of Wisconsin-Stout; Philip M. Ogden, Roberts Wesleyan College; George A. Randall, Gloucester County College; Douglas Taylor, DePaul University; and Anthony Tovar, Murray State University. Many of these individuals will recognize their suggestions incorporated in this edition.

My thanks go also to the staff of the college division of Bedford/St. Martin's, the latest incarnation of the St. Martin's Press College Division, who had the foresight to publish the first edition of this book in 1972, and who, through a generation of staff changes, mergers, acquisitions, and restructurings, have remained helpful, interested, and unfailingly supportive. I have been fortunate in having a series of editors over the years with whom it has always been a pleasure to work. Most recently, my editor has been James R. Headley. I appreciate his feedback and encouragement as well as the assistance of his staff members, Brian Nobile and Scott Hitchcock.



Finally, a very special note of appreciation goes to my family, to whom I have dedicated this edition: my wife, Jill, my daughter, Samantha, and my grown sons, Mitch and Ken, for the meaning they have given to my life and for the strength I draw from our relationships.

In the hope that readers continue to find this book useful and that there will be future editions of this book, I once again invite readers – both faculty and students – to contact me with comments and suggestions. I can be reached most readily by e-mail either directly, at <[ateich@aaas.org](mailto:ateich@aaas.org)> or through the links on the *Technology and the Future* Web site <<http://www.alteich.com>>. The Web site also contains a variety of supplementary resources related to the book, including links to more information about the authors of the various articles, tables of contents of earlier editions, the full text of several hard-to-find articles from earlier editions, and my personal home page.

## **Albert H. Teich**

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1. "The Limits of Technology," *New York Times*, January 3, 1999, p. 8
2. Instructors who have used this book over the years may recall that it was originally called *Technology and Man's Future*, a title that was retained through the first three editions, but that seems almost impossibly inappropriate today.

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**Updated: February 10, 2001**