

Preface

Must human beings submit to the harsh logic of machinery, or can technology be fundamentally redesigned to better serve its creators? This is the ultimate question on which the future of industrial civilization depends. It is not primarily a technical question but concerns a fundamental issue in social philosophy, the neutrality of technology and the related theory of technological determinism. If technology is neutral, then its immense and often disturbing social and environmental impacts are accidental side effects of progress. Much current debate polarizes around the question of whether these side effects outweigh the benefits. The advocates of further progress claim "reason" as their ally, while the adversaries defend "humanity" against machines and mechanistic social organizations. The stage is set for a struggle for and against technology.

This book rejects this dilemma and argues that the real issue is not technology or progress per se but the variety of possible technologies and paths of progress among which we must choose. Determinists claim that there are no such alternatives, that technological advance always and everywhere leads to the same result. This view is increasingly contested by students of technology. But if alternatives do exist, the choice between them will have political implications.

Modern technology as we know it is no more neutral than medieval cathedrals or the Great Wall of China; it embodies the values of a particular industrial civilization and especially those of elites that rest their claims to hegemony on technical mastery. We must articulate and judge these values in a cultural critique of technology. By so doing, we can begin to grasp the outlines of another possible industrial civilization based on other values. This project requires a different sort of thinking from the dominant technological rationality, a critical rationality capable of reflecting on the larger context of technology.

These remarks, adapted from the preface to the previous edition, *Critical Theory of Technology*, were written ten years ago. It was easier then than now to make a case for radical change. The defeat of communism followed by ten years of economic growth has discredited social criticism. The power of positive thinking has never been more in evidence. But despite the remarkable achievements of these last ten years, it is reasonable to entertain doubts about the ability of this society to realize our ideals. Surely it is not necessary to list the many discouraging events and trends that justify these doubts. To give an example, a society that imprisons nearly 1 percent of its population is deeply flawed. And it is still the case that most work is unfulfilling, if not actually painful and dangerous. Nor have we found a general solution to the environmental problems caused by the technologies on which we rely for our vaunted "way of life." While we are more than ever aware of both the promise and the threat of technological advance, we still lack the intellectual means and the political tools for managing progress.

Critical Theory of Technology addressed these problems by reconstructing the idea of socialism on the basis of a radical philosophy of technology. The central concern of the book was the growing conflict between democracy and capitalist and technocratic forms of organization. This conflict is still with us, registered not only in the ever narrower scope of democratic political debate but also in the social sciences, which confidently predict the coming reign of expertise. The alternative proposed here is the democratization of the many technically mediated institutions of our society. That proposal had a favorable historical context when the book was originally conceived. It was easier then to imagine a utopian political discourse tested in practice in the turmoil of disintegrating communism. Now that context has disappeared, and it is necessary to rethink the rationale for continuing to discuss utopian political ideas.

In this new context, radical politics has a somewhat different character than it did a decade ago. We have learned the negative lessons of the fall of communism but have not yet devised positive aspirations that respond to new trends toward globalization and computerization. Indeed, one is struck by the generally negative tone of contemporary social democratic and left discourse. One focuses on defending the welfare state against corporate attacks, while the other spends far more time criticizing capitalism than explaining what will replace it.

This book, with its utopian revision of the idea of socialism, still has something to offer. Consider it a provocation to rethink fundamental modern institutions in the light of the aspirations that have driven modernity for the last few centuries. Socialism is the name for one influential movement in-

spired by these aspirations. For long periods socialists interpreted the limitations of capitalism economically and their main concern was therefore with economic justice and growth. In the 1960s socialism was recast as a radical democratic ideology in opposition to capitalist technocracy and communist bureaucracy. Since then it has been associated with a broad conception of human liberation that includes gender and racial equality, environmental reform, and the humanization of the labor process.

These issues have not been superannuated by successful reforms. On the contrary, the struggles continue under changed conditions. But today the link forged at the origin between these struggles and the demand for a socialist economic system seems strange. It is widely assumed that capitalism is simply an efficient way of organizing production and distribution. The old socialist arguments about obstacles to human fulfillment under capitalism seem to have been refuted, at least insofar as economic growth is concerned. *Critical Theory of Technology* responded to this objection by developing an entirely different interpretation of the structural problems of capitalism centered not on obstacles to growth but on the nature of capitalist technology and management. Critique of this sort originates with Marx. As I will show in later chapters, his understanding of the social nature of technology was far in advance of his time. We are still able to learn from this aspect of Marx's theory, even if many others are long since discredited.

The reader will have to judge the argument on its merits as I defend it in later chapters. However, I do want to emphasize at the outset that the collapse of the Soviet Union does not refute it. The conception of socialism sketched in this book was not modeled on Soviet practice, but it was influenced by a generation of popular reform movements in Eastern Europe that were suppressed by Soviet invasions and threats of invasion. Finally, under Gorbachev it seemed as though fresh ideas would get a chance in Russia itself. That hope was not unreasonable, however illusory it may seem in hindsight.

Earlier Eastern European protests could have inspired a transformation of the Soviet regime. Workers' councils in Hungary in 1956 and Yugoslav self-management suggested a radical power shift in industry, from the bureaucracy to workers. Independent unions in Poland and market and democratic reforms proposed during the Prague Spring of 1968 promised a revived economy and civil society. One could hope that these and other innovations would be introduced in the Soviet Union, combining elements of public ownership with worker-controlled cooperatives, some private enterprise, particularly in agriculture, and much-needed political democracy. Such an outcome might have shown the way beyond the sterile dilemma of capi-

talism versus communism. It is likely that the Russian people would be better off had they tried this approach.

Would this still have been "socialism"? Not in the eyes of the communist bureaucrats who overthrew Gorbachev and discredited the regime so thoroughly that communism and the Soviet Union disappeared with the failure of their brief coup. But when one compares orthodox communism with the idea of socialism as it was first formulated in Marx and Engels, one discovers more differences than similarities. The Soviets could reasonably claim Marxist sanction for industrial planning, security of employment, and low-cost basic necessities. But state ownership of the entire economy, even where technical conditions were unsuitable as in agriculture, the bureaucratization of every aspect of social life, political and police dictatorship, slave labor and mass murder, the reduction of art to propaganda, none of this has its source in Marx. Much of what passed for communism in the Soviet Union contradicted what socialism has meant historically outside the range of Stalin's police.

The fall of the Soviet Union was disappointing to anyone who hoped to see the development there of an original society building on the accomplishments of the past. On the other hand, most observers expected that Russia would be enriched by participation in the world market. The actual outcome has been catastrophic economic and social collapse under a system so corrupt and incompetent it beggars the imagination. But the failure of Russian capitalism has not rebounded to the credit of a socialist alternative embodying the hopes of the 1980s. It is as though socialism could still make a claim on our attention only so long as it had the power to shape an actual society in however perverted a form. Having lost that power, it has all but disappeared from public awareness except as a vague memory of an unsuccessful historical experiment.

Since then we have been living in a very strange time. The end of the Russian adventure justifies skepticism about any and all significant historical change. There is an iron law of history; it is just not the one Marx promulgated, but the one effectively realized in the triumph of capitalism. For a decade now, disillusionment with high ideals has cohabited with optimism on the stock market. Unbounded confidence in the future is fashionable so long as it is confined to quarterly reports. What is naive in the social critic counts as shrewdness in the investor. No one can predict how long this peculiar constellation will last. If a book like this one can still be of interest, it is because we are all more or less aware that it cannot last forever. To dismiss radical critique out of hand testifies to an unfortunate susceptibility to the "irrational exuberance" induced by an economic boom. The fact that intellectual complacency, even arrogance, is respectable today is hardly a reason

to condone it. The inevitable bust that follows every boom can be counted on to teach humility in the face of the immense problems of even the most advanced of capitalist societies. Someday, probably sooner rather than later, we will want to rethink the plan of our social life. For that purpose we will need imaginative social criticism, and that is what I hope readers will find here.

The text of this new edition has been heavily revised to bring it up to date. In addition, I have added a chapter on online education, an application of ideas presented in chapter 4 (chapter 5 of the original edition). The introduction defines critical theory of technology and situates it in relation to other approaches.

Part I argues that for all its insight Marx's critique of industrialism lacks a plausible strategy of change. The historical experience of communism shows that Marx was wrong to believe that states could be the primary agents of radical technological transformation. Later attempts by Marcuse and Foucault to take into account the role of technology in modern societies offer promising starting points for a new formulation of radical theory.

Part II addresses the relationship of human initiative to technical systems in the field of computers. Since modern hegemonies are increasingly organized around technology, this relationship has become central to the exercise of political power. Computer design is now political design. The specific example of the debate over online education is discussed at length.

Part III considers the larger cultural context of technological change. Too often technology and culture are reified and opposed to each other in arguments about the "trade-offs" between efficiency and substantive goals such as participation or environmental compatibility. A better understanding of the relation of technology and culture dissolves these apparent contradictions. These considerations open the way to a discussion of a socialist alternative to the existing industrial society. The conclusion develops this argument further through a holistic critique of technology and a theory of its democratic potentialities. Although suppressed today, in the future these potentialities may become the basis for a society that reconciles wider freedoms with more meaningful forms of material well-being.

This new edition of *Critical Theory of Technology* can now be read alongside my two other books on philosophy of technology, *Alternative Modernity* (University of California Press) and *Questioning Technology* (Routledge). The first of these books explores the implications of technological struggles in a number of domains, including medicine and national identity. The second develops the implications of constructivism for philosophy of technology. Together, these books present a common position on the nature of

technology and its relation to society. I hope that the argument will become clear considered from the different angles of approach each book offers to the central theme they share, the radical democratization of technological societies.

Portions of this book are adapted from the following articles with the permission of the publishers: "Transition or Convergence: Communism and the Paradox of Development," in Frederick Fleron, ed., *Technology and Communist Culture*, Praeger Publishers, 1977; "Technology Transfer and Cultural Change in Communist Societies," *Technology and Culture*, April 1979; "The Bias of Technology," in R. Pippin, A. Feenberg, and C. Webel, eds., *Marcuse: Critical Theory and the Promise of Utopia*, Bergin and Garvey Press, 1987; "The Ambivalence of Technology," *Sociological Perspectives*, Spring 1990; "The Critical Theory of Technology," *Capitalism, Nature, Socialism*, Fall 1990; "Democratic Socialism and Technological Change," in P. Durbin, ed., *Philosophy of Technology: Broad and Narrow Interpretations (Philosophy and Technology*, vol. 7), Kluwer, 1990; "Post-Industrial Discourses," *Theory and Society*, December 1990; "Distance Learning: Promise or Threat?" *Crosstalk*, Winter 1999; "Whither Educational Technology?" *Peer Review*, Summer 1999; "Will the Real Posthuman Please Stand Up! A Response to Fernando Elichirigoity," *Social Studies of Science*, vol. 30, no. 1 (February 2000). Reviewers for these journals gave me much good advice. Chapter 3 is based on a paper written with Andreas Huyssen and presented in 1980 to the conference titled "Rhetorics of Technology," Center for the Study of Linguistics and Semiotics, University of Urbino. We received precious help from Michel de Certeau in the preparation of that paper. I wish to also thank Rafael Heller and Todd Sallo for editorial help with the articles on which chapter 5 is based.

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A Critical Theory Revisited

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