[Chinese preface to *Alternative Modernity*.]

Preface

Modernity is a paradoxical concept. On the one hand, it refers to apparently universal accomplishments such as modern science and technology, democratic forms of government, urbanization, and so on. On this account, modernity is opposed to tradition and replaces it everywhere with a rational "technoculture," rooted in the spread of a unique technological system. If this is true, there is only one modernity and it is gradually erasing the cultural memory of humankind and homogenizing the globe. Modernity is a global phenomenon that first struck down the traditional cultures of Europe before spreading its universalistic rationalism to the rest of the world. I will call this the technological understanding of modernity. It assumes a determinist philosophy of technology according to which society is shaped by technical advances which themselves depend on the advancement of knowledge of nature.

But this is not the whole story. There is another cultural sense of modernity in which it is the expression of a particular tradition, the Western tradition, and more specifically American culture. Einstein is modern, but so is Mickey Mouse. How do these two sides of the concept of modernity relate? Is modernization truly universal or is it mere Westernization, Americanization, a kind of cultural imperialism against which national cultural resistance is appropriate and necessary?

After World War II, as the United States became the dominant world power, the technological sense of modernity prevailed. With the collapse of colonialism, it seemed that what the world needed was the rapid replacement of traditional cultures by a modern culture based on technological rationality imitated from the US. The communist world resisted this analysis but only to substitute a putative communist modernity for the one advocated by the US. At bottom, the position was similar: rationalistic universalism supported by technological determinism.

In the last decade or two things have begun to change. While the technical and policy apparatus of global financial institutions and most national governments continues to pursue technological modernity as a universal project, intellectuals have increasingly come to see modernity on the terms of the second definition, as a particular culture masquerading as universal rationality, or in a more sophisticated version, they have charged that rationality as we define it in the West is culturally biased and lacks universal import. On these terms, technological modernity is denounced as a totalitarian imposition, a refusal of all that cannot be integrated to a smoothly functioning social machinery. This has led to various challenges to universalism, from the new fundamentalist ideologies of Islam to the postmodern philosophies of difference.

But these challenges have proven unproductive because they remain on such an abstract level they do not have any implications for technological development, the actual foundation of modernity. One can hardly opt out of the modern world, so Islamic fundamentalists no less than postmodern critics end up bowing before the old gods, fundamentalists on the arms markets and postmoderns every time they turn the key in the ignition. Our way of life is rooted in modern technologies at such a basic level that radical ideologies seem unable to touch it. What we need instead is what I have called a "critical theory of technology," a critique that enters into the life of the technical systems that underlie and shape our world. Where a purely negative critique of modernity leaves everything as it was, a critical theory of technology can reveal unexplored possibilities. Only with such a theory can we begin to unravel the paradox of modernity, which is both universal and particular, reason and culture at one and the same time.

Alternative Modernity is the second of three books I have written developing this approach. The first of these books, *Critical Theory of Technology,* appeared in 1991 and the most recent, *Questioning Technology,* in 1999. In the ten years it took to write these books much has changed. Two particularly dramatic changes have marked the end of the century: the fall of the Soviet Union and the rise of the Internet.

In the late 1980s, as I was preparing the first book in this series, the Soviet Union was gradually coming apart. But it seemed that *glasnost* might lead to profound and positive

developments, a reformed and more democratic socialism in Russia. I took this as evidence that the Western capitalist model might not be the only coherent organization of a modern technological society. It was at least possible to hope that a new form of socialism might represent an alternative modernity. This prospect inspired a refutation of technological determinism and reflection on the limits of the established model of modernity. But we now know that these hopes were not to be fulfilled, at least not as far as Russia was concerned. Gangster capitalism and social disintegration have prevailed instead as income and even life expectancy decline. Whether China can accomplish what Russia failed to accomplish remains to be seen.

In the decade leading up to the writing of this book, I also helped create the first online educational program, which was launched in 1982 at the Western Behavioral Sciences Institute in La Jolla, California. After years of study with Herbert Marcuse in the tradition of the Frankfurt School, I was suddenly plunged into the world of computer networks at an early stage, even before the Internet went public. Soon I was directing a project on interface design for computer communication for the Digital Equipment corporation, a major computer manufacturer.

From this intimate association with a developing modern technology, I learned another and more durable lesson in alternative modernities: the direction of computer development was not determined by the nature of the device but was chosen by users. They did not simply take the computer as a given, but reoriented computer makers and computer system administrators toward communication functions the importance of which had been greatly underestimated. Indeed, the explosion of activity on the Internet has completely changed our conception of the computer and is altering the social world in unexpected ways.

Alternative Modernity drew on these lessons of recent history to depict a world in which the future was still undecided, in which social movements, a variety of ethical and aesthetic values, and differences in national culture could all play a part in influencing the definition of modernity. In support of this non-deterministic position, I relied on social constructivist theory, building a first bridge between philosophical reflection on

modernity and the burgeoning field of science and technology studies. Social constructivism provides empirical evidence that technological development is not deterministically fixed by a universal rationality but instead depends on a variety of social factors. Actors are as important as reasons in this conception. I applied this approach to the critique of various philosophies of modernity and in the concrete studies that comprise the book you are about to read.

Alternative Modernity argues that since technological development is contingent not just on reason but also on society, it ought to be democratized like other domains of social activity. My most recent book, *Questioning Technology,* carries the same argument forward into with a detailed consideration of the nature of a democratic politics of technology. This question is of course relevant to China, where technological decisions of great moment are being made today by a small government and business elite without much public input.

Modern technology is transforming China as earlier it transformed Japan and Russia and still earlier the Western countries in which it originated. But surely there is a difference between these episodes. China is no ordinary country but represents such a large percentage of the world's population that it cannot simply imitate the West without disrupting the world economy and ecology. This is most obvious in the case of transportation technologies. China will continue to develop, but it must innovate a new path that does not depend on automobiles. One shudders at the thought of 500,000,000 Chinese Fords and Fiats, the approximate number that would equate American levels of automobilization.

Does this mean that China is forever doomed to poverty? Not at all. What we take for wealth today is relative to changing standards and values. These standards and values have tended over time to adjust to real constraints: to continue the example, the most desirable cars have varied greatly in size depending on the price of oil. We Americans did not merely resign ourselves to smaller cars after the first OPEC oil shock, but actually came to see them as superior to the behemoths we used to drive. When oil prices dropped, Americans gradually rediscovered the beauty of bigness and now they

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race around in cars twice as massive as before. Meanwhile, many residents of Amsterdam, Paris, and New York are prosperous and contented without owning a private car at all. Such variations in taste testify to the lability of economic culture. China too will define its own model of wealth in a way that conforms with its real possibilities of development.

What kind of world will China create in the next century as it becomes rich? This is not a question that can be answered today. More important is understanding what kind of developmental process is best for the country. On that question there is much disagreement. As an outsider looking in I no doubt miss most of the nuances, and I apologize in advance for the limitations of my point of view. But so important is China outsiders can hardly be expected to abstain from judgment. To me it appears as though the mainstream of development theory and practice in China is still wedded to many features of Western models long since either harshly criticized and discredited or abandoned altogether in the West. The pursuit of an original path of development has not yet begun. On the contrary, imitation of Western models is the order of the day, and, for example, gigantic projects that disrupt society and damage the environment still have a certain charm in China if not in the US and Europe.

In this context, Western reflection on technology and society can perhaps contribute to a more selective and critical attitude in China. It would certainly be helpful if Chinese intellectual and political elites took into account not only the official propaganda of Western governments and corporations but also the critical voices that will contribute to shaping the Western future. Otherwise, China risks ending up with what we call "white elephants," awkward monuments to past orthodoxies.

The ambition of *Alternative Modernity* is to provoke the liberating thought that the social future is not merely a quantitative extrapolation from the present. Of course we know this in a general way, but it is not so easy to apply that general knowledge to specific instances. In technical matters we tend to think in terms of less and more, more computing power, more electricity, more cars and planes, and so on. The tipping point where quantity turns into quality is overlooked, where, for example, adding more

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computing power transforms the computer from an instrument of professional work into a consumer technology. The resulting shift from one continuum of development to another is rarely anticipated in advance. But insofar as modernity is defined by the penetration of technology into every sphere of social life, these understandable limits on our technical imagination become unacceptable limits on social theory.

The idea of an "alternative" modernity suggests a widening of the range of possibilities. The book surveys many different approaches to this theme. But most importantly, it argues for including more actors in the process of technological decision-making. By actors we mean not only experts and corporate and government officials, but all those enrolled in technical networks, workers, users, victims or beneficiaries of the side-effects of technical advance. Each of these unofficial actors has a unique perspective on development. Their experiences and opinions constitute what Foucault called a "subjugated knowledge," a knowledge from below revealing aspects of reality that are only dimly focussed by those in positions of authority.

Let me offer an example from medicine of such an evolution under the influence of subjugated knowledge. This is a case of technology transfer, not in the familiar direction--from West to East--but in the reverse direction, from East to West. The point of the example is not to laud the merits of Chinese medicine, which are widely recognized by practitioners and their patients, nor am I concerned with whether science explains the effectiveness of this practice. Rather, this example is meant to show that a lay public can influence a scientific-technical profession, in this case the American medical establishment, with constructive results.

Western medicine has long treated Chinese medicine as an ineffective survival of a prescientific tradition. In the United States, this attitude effectively excluded Chinese medicine from legitimate status as a healing art. No doctor would recommend and no insurance company would pay for such services as herbal treatments and accupuncture. However, American patients discovered the efficacy of some Chinese treatments for conditions with which Western medicine has limited success, such as soft tissue injuries and symptomatic treatment of chronic disease. More and more non-physician medical

practitioners offered these treatments. By the early 1990s the demand for "alternative medicine" became difficult to ignore. This demand resulted in the creation of an Office of Alternative Medicine at the National Institutes of Health in 1992 and eventually insurance companies began to reimburse some Chinese treatments. In 1998, in a truly startling reversal of its earlier position, *The Journal of the American Medical Association* published an entire issue on alternative medicine. The articles applied modern scientific methods, such as blind clinical trials, to verifying the effectiveness of treatments that would have been dismissed out of hand only a few years before. The moral of this story is simple: scientific experts have their prejudices and ingrained traditions too, and can learn from interacting with the large store of experience available to the general public and the bearers of traditional knowledges.

The essence of a democratic politics of technology is to improve the communication between subjugated knowledges and the official technical knowledge of planners and executives. There are compelling reasons to favor such a democratic evolution of the Chinese technological system. In the first place, the costs and problems of development cannot be calculated where citizens find it difficult to protest and express their opinions. For this a relatively free and lively civil society is necessary. The Soviet Union now pays the enormous price of the ecological disasters caused by industrialization uninformed by public opinion. But just as important, without opening the lines of communication between the underlying popluation and those responsible for development, it will be impossible to find an original path native to Chinese conditions. No matter what their intentions, an isolated technocratic elite in a developing country can only imitate foreign models since the West is ultimately the source of its legitimacy. Only the rich and complex interaction of a whole people can innovate an alternative modernity suited to China. And surely this is what China deserves.