Chapter 4

A Marxist Critique of Capitalist Technology: Marx Wartofsky

The Society for Philosophy and Technology grew out of a conference that I hosted at the University of Delaware in 1975. The original idea came from Carl Mitcham. But it was a set of fortuitous circumstances that made the conference possible. I had come to Delaware in part because of an earlier, aborted effort to establish a center there for philosophy of science, memorialized in a set of conference proceedings called the Delaware Seminar—an effort that had not received a warm welcome from scientists associated with the DuPont Company. Even so, a university that existed within the milieu of, and was well supported by that company with its slogan, "Better Things for Better Living through Chemistry," seemed a natural locus for such an effort. And the local scientific and engineering community did support the idea of the 1975 conference. Also, at the University of Delaware there was a robust history of science and technology community of scholars, including a strong link with the DuPont-related Hagley Fellows program of the Eleutherian Mills Hagley Library. Eugene Ferguson, an eminent historian of technology with an engineering background who was a member of the Delaware history department, had been instrumental in getting Mitcham's bibliography of the philosophy of technology published in *Technology and Culture* in 1973. The editor of that journal, Melvin Kranzberg—who had, earlier, in 1966, published in its pages one of the first major symposia on philosophy of technology—was easily enlisted to help provide names of philosophers to invite to the conference. But probably what was most significant was that the time was right. The North American academic community was just emerging from, and still influenced by, a social movement—the so-called New Left—that was critical not only of the Vietnam War but also of the technologies utilized there, and by extension a whole range of technologies that were widely perceived to be damaging especially to the natural environment.

Marx Wartofsky, the fourth SPT president but only one focus of this chapter, was not involved with the 1975 conference. Nevertheless, he and his colleague at Boston University, Robert S. Cohen—who together ran the Boston Colloquium for the Philosophy of Science with its Boston Studies series of publications—supported the venture from a distance. (The first proceedings volume of SPT based on an international conference was jointly published in the Boston Studies series and in the new Philosophy and Technology series.) And one of their colleagues at Boston, Joseph Agassi (who had contributed to the *Technology and*

Culture symposium in 1966), was a presenter at the Delaware conference. (See Chapter 7 below on Agassi.) So it was natural to invite Wartofsky and Cohen to get involved in SPT—even though, as was the case with Michalos, Wartofsky was another interloper from philosophy of science. Wartofsky's Marxist leanings, however, made his work more relevant to philosophy of technology—and popular critiques of technology—than the typical philosopher of science of that era.

Wartofsky's best known publication at the time was his *Conceptual Foundations of Scientific Thought: An Introduction to the Philosophy of Science* (1968). And he did not go on to publish a great deal in philosophy of technology other than his presidential address to SPT in 1989, "Technology, Power, and Truth" (included in Winner, ed., *Democracy in a Technological Society*, 1992), and two or three other articles. So this chapter focuses less on Wartofsky's own work in particular than on a *general line* of Marxist and neo-Marxist thought that strongly influenced many leaders of the New Left.

Here is a key text from Wartofsky's 1989 SPT presidential address: "[I] characterize some of the objective conditions of the fourth revolution [in the history of technology], . . . namely, those conditions which politicize technology as a central question of national policy, the national economy, international competition, rivalry, or war, and governmental or global regulation of massive hazards for species life. All this is new [though . . .] this does not mean that aspects of such problems did not already show themselves much earlier . . .

"The fourth revolution, by contrast to the first three, introduces a terrifying option; it makes technological or maker's truth hostage to political power, in a decision-procedure that tests policy against the lives of millions, against the planet's future . . .

"However loose the fit between intentions and outcomes in policy matters, good faith requires some reading of the relevant facts, in their best determination, upon which the policy decision is crucially based. The willful distortion or suppression of facts, or even of reasonable conjectures and arguments about the facts, in the interests of some favored policy goal, or of some exercise of power, is the most dangerous corruption that the politicization of technology makes possible in the context of the fourth revolution" (pp. 27 and 33).

I will return to this text, but in my book, *Social Responsibility in Science,*

Technology, and Medicine (1992)*,* I include a section on why Marxism seems to offer a solution for the social problems associated with modern technology. I borrow from that here almost *verbatim.* I did not there and do not here want to glibly dismiss Marxist responses to the problems of technology.

I take the Marxist response seriously in spite of the end of the Cold War. Here is why. I had proposed early in that book a list of ten types of social problems that beset contemporary high-technology society. The problems range from the nuclear arms race to commercialization of traditional high culture, from ecological catastrophes and genetic engineering to boredom in high-technology jobs and alienation in family life in today's sprawling urban centers. But at the center of my list is growing technoeconomic injustices, and especially the increasing disparity between the haves and the have-nots—whether these are national, between socioeconomic classes in high-technology economies, or international, between developed and supposedly developing nations.

It is this problem that Marx, and Marxists ever since, have focused on. I would in fact go so far as to say that any interpretation of Marx that does not focus primarily on the class struggle between, on one hand, those who control the means of production appropriate to a given stage in the dialectic of history, and, on the other, the exploited workers who actually produce economic wealth is not within the mainstream of Marxist theory as I understand it. I would go further and say, anticipating objections to my interpretation, that any authentic Marxist ought to say that none of the other problems of technological society I list will be solved until the class struggle is resolved worldwide.

Why is this? There would seem to be an obvious link between the economic issue—especially if interpreted in class-struggle terms—and all the other issues: the nuclear economy obviously; industrial and consumption-driven wastes; the temptation of the haves to use high-tech surveillance methods, and perhaps eventually genetic intervention, to keep the exploited have-nots in line or to mold them for particular sorts of work; bribes for workers to induce them to accept hazardous or mind-numbing jobs; worker alienation carrying over into family life, or even leading to its breakdown; schools turned into corporate training grounds without attention to their traditional role of educating responsible citizens; politics turned into media manipulation, frustrating true democracy; the arts no longer critical of society but corporation-dominated. This all-too-familiar litany of contemporary social problems almost always sounds, to defenders of the corporations and of high-tech society, as though it must come from left-wing

enemies of capitalist society—"fellow-travelers" at worst, or dupes of the Communist line at best.

Several common interpretations of what is going on here need to be dispatched quickly. Students, when they come in contact with Marxist views on the impact of economic power on social problems, often think of it in terms of the exercise of raw economic power. Wealthy individuals, high-level corporate managers, politicians in league with the wealthy and managerial classes, can simply do as they will. If it means profit for them, they can start wars or keep cold wars going indefinitely. (Perhaps they would now say almost indefinitely.) Similarly, critics often take Marxists to be saying that leaders of the capitalist exploiting class act in conscious concert to control education or the media. And, finally, cynics interpret capitalist exploiters as pure and simple greedy men who will do anything, no matter the effects on workers or on the environment, if it means more short-term profits for themselves. (Short-term profits, of course, turn into long-term capital investments, and the cycle goes on.)

None of these interpretations is necessarily or entirely false. No doubt leading capitalists do exercise raw economic power, do sometimes act in collusion in ways that seem to amount to conspiracy (or monopolistic practices), and can be as greedy as anyone else in society. But none of this is the point of the Marxist claim that class divisions pitting capitalists against workers are the root of all social ills in our technological society—or in any previous version of capitalist society. According to Marxist theory (as I am interpreting it here), it is not the individual motives of capitalists, singly or acting in concert, that explain why class-division disparities between capitalists and workers lead inevitably (according to this view) to toxic wastes, hazardous workplaces, and boring high-technology jobs. What makes these social problems insoluble until exploitation ends, according to Marxism so interpreted, is that capitalism is a wholesale ideological superstructure erected on the base or substructure of capitalist-era modes of production. Our entire way of life, all our social relations, not only at work but in the home and everywhere else, are intelligible only in terms of the ideology of capitalism (or, in the present view, techno-capitalism).

A slightly dated example: Eugene Genovese, a neo-Marxist historian, provides a telling picture of how all of this is supposed to have been in evidence at one time, in his interpretation of life in the slaveholding society of the Old South in the United States, including its accompanying (and legitimating) worldview. The ideology afflicted not only the slaveowners themselves, but their wives, their

mores, the law of the land—and even the self-images of non-slaveowning whites, of overseers, as well as of the slaves themselves (however much the slaves later came to see their interests as at odds with the slave economy). In one among many passages (the book must be read in its entirety to get the total picture of a worldview as a seamless—though class-divisive—web), Genovese says: "This ideology . . . developed in tandem with that self-serving designation of the slaves as a duty and a burden which formed the core of the slaveholders' self-mage. Step by step, they reinforced each other as parts of an unfolding proslavery argument that helped mold a special psychology for master as well as for slave. The slaveholders' ideology constituted an authentic world-view in the sense that it developed in accordance with the reality of social relations."

The kind of men and women the slaveholders became, their vision of the slave, and their ultimate traumatic confrontation with the reality of their slaves' consciousness cannot be grasped unless this ideology is treated as an authentic, if disagreeable, manifestation of an increasingly coherent world outlook.

Genovese's marvelously comprehensive account of an earlier capitalist society, where class divisions are obvious, goes into all aspects of the problem—religious legitimations as part of the ideology, and so on. But if his depiction of how economic relations spread out in every direction to become a wholesale ideology seems esoteric and far removed from techno-capitalist ideology, it nonetheless highlights, in a historian's fashion, the substructure/superstructure dialectic.

The same thing is done from a social-scientific perspective by Peter Berger and Thomas Luckmann. Their focus is on ideological consciousness and how it comes to have the authoritative character it does throughout a culture: "Only at this point does it become possible to speak of a social world at all, in the sense of a comprehensive and given reality confronting the individual in a manner analogous to the reality of the natural world. Only in this way, as an objective world, can the social formations be transmitted to a new generation. In the early phases of socialization the child is quite incapable of distinguishing between the objectivity of natural phenomena and the objectivity of social formations. . . . All institutions [including the most basic institution of all, language] appear in the same way, as given, unalterable and self-evident."

It should not be thought that such "objectivity" of social institutions, of ideology, ends when the child grows up. Berger and Luckmann admit that one of the most difficult cases for their dialectical theory of social consciousness is that of the

alienated intellectual—and especially of the revolutionary intellectual. But far from disproving the wide-ranging impact of reigning ideologies, the case of the revolutionary intellectual actually confirms the theory: it is extraordinarily difficult for anyone to break out of an ideology, and, in Berger and Luckmann's view, when one does so, he or she will immediately try to rally a group together and produce a counter-ideology.

Such praxis-oriented revolutionary theorizing has been applied directly to technological society and its problems. The best-known instance is the theories of Herbert Marcuse, especially in *One-Dimensional Man* (1964). For my part, however, I prefer the elaborations of Marcuse's views, in a historical mode, by David Noble (1977, 1984). Where Marcuse claims that any opposition to the reigning ideology—for example, in cases of union opposition to hazards in high-technology industrial workplace—ends up being interpreted as counterproductive, even irrational (according to the "logical" demands of technological "progress"), Noble spells out in relentless detail, and wherever possible in the words of corporate managers, the total way in which the ideology of science and technology in the (alleged) service of society came to permeate every aspect of society in twentieth-century America. To speak of solving particular social problems in our science-based economy without changing the overarching ideology, according to Noble (and those who think like him), is, paradoxically, to reinforce rather than undermine the foundations on which the problems rest.

Once again Peter Berger (this time with Brigitte Berger and Hansfried Kellner) can be cited to provide a social-scientific confirmation of this dialectical view. Berger and his colleagues call their method phenomenological, but they intend for their comprehensive account—of how technological production and bureaucracy permeate every aspect of ordinary consciousness in thoroughly "modernized" societies—to be taken to be scientific. They believe that it is impossible to conceive of a modern society without technology and bureaucracy (that is the phenomenological part of their account), but they are equally convinced that empirical studies will confirm the implications of their account. And to deal in any radical way with major social problems such as the boring character of work in highly automated production facilities without changing the overall technoeconomic system would, on their account, seem extremely unlikely. (In fact they think it is unlikely in any case.)

What all of this boils down to is a powerful Marxist objection to reform politics

(sometimes disparaged as "mere procedural justice"): it cannot get at the roots of techno-social problems without challenging the techno-economic system.   And that system has built-in disparities between exploiting managers and exploited workers, and between high-technology nations and the so-called "developing nations" so often exploited for the raw materials and exotic minerals needed for high-technology production.

What should one conclude from this? If anything is going to be done to deal with technosocial problems, they cannot be dealt with one at a time. They are all interconnected, and the fundamental problem is economic. Only a political revolution that eliminates the power of capitalists and quasi-capitalist bureaucrats over the masses of workers offers any real hope of success.

In Chapter 12, we will see how Andrew Feenberg thinks some managers can be won over to more enlightened views.

The most obvious objection that can be raised against the kind of Marxist thinking presented in this brief account is that it is far too totalistic. (See Bunge in Chapter 5, or Pitt in Chapter 9.) Part of a reply can already be seen in the Wartofsky quotation earlier. The stakes in our technological society are truly worldwide.

But Wartofsky's emphasis on the *willful* distortion of the facts the public needs to know, in making good democratic decisions where a decision "tests policy against the lives of millions," or "against the planet's future," suggests another question to me. It follows, I think, his own Marxist lead. Suppose that distortions are not willful but ideologically blindered; and suppose that the ideological blinders affect not only leaders but the entire populace. Is not that situation even more terrifying than the one Wartofsky talks about explicitly?

This might lead us to continue to think that the *only* way out is to heed the radical critique and act accordingly, to join in the worldwide workers' revolution. Unless the late-capitalist ideological blinders, of leaders and the masses, are removed, there is no way of avoiding technological catastrophes affecting millions of people—or even techno-blunders that might destroy life on earth.

The problem with this kind of revolutionary rhetoric today is the end of the Cold War and the demise of Communism in Eastern Europe. Almost no one today thinks that Marxism, or at least the version put in power in Russia and its

satellites under Stalin after World War II, is the solution for *any* kind of problem.

There have been at least two kinds of replies on the part of radicals to this situation. The first, in Russia and the former Iron Curtain countries and among some intellectuals in the West, is a dogged insistence that Marxism still has the answers—and that the first answer is still to unmask ideology, to show up technocapitalist imperialism for what it is wherever it is, even among supposedly populist leaders in what is left of the old East Bloc.

A second kind of response has been made by Andrew Feenberg, among others. (I will consider Feenberg's version of neo-Marxism in Chapter 12.) Feenberg takes Marcuse as his starting point. To put the matter briefly here (saving Feenberg's full account for later), a new order can become a reality if workers are educated to recognize the clear benefits of a new socialized system, and if their consequent demands are met with a sufficiently sympathetic response on the part of at least some technical managers now imbued with a "culture of responsibility."

It seems, however, that this fails to show how ideological blinders are going to be removed.

What I have elsewhere proposed as the role for radical socialist theorizing today is that it be merged with a Deweyan progressive politicking. According to Dewey, philosophers should know, the solution of urgent social problems—including technosocial problems and even including the problem of technological manipulation of public opinion (see Hickman in Chapter 14)—is to be sought by way of collaboration among all sorts of activists, from workers and union leaders, to corporate and civic and educational leaders, to intellectuals. Dewey had an ambivalent attitude toward Marxism and toward Communism in Russia; he recognized the need to unmask the ideological obfuscations of corporate leaders and their cronies in government but he was extremely leery of violations of civil liberties in the name of democracy. Though I am not aware that Dewey ever said this explicitly, the thrust of his thinking on the matter ought to lead us to conclude that the unmasking efforts of Marxist and other radical intellectuals can be a tremendous boon to progressive social activism. It is not necessary that everyone involved be radicalized; it is enough that the radicals among progressive social activists help the rest to see through ideological obfuscations. Of course, unreconstructed Marxists are going to retort that this is naïve liberal posturing.

Controversies? Wartofsky always remained an unreconstructed *Marxist,* in the scientific materialist sense, though he had many differences with other Marxists. In general, that would place him in opposition to almost any kind of liberalism, but in fact he was notably *pragmatic* in terms of short-term means. (In the Bordeaux address quoted above, for example, he didn't take on Jacques Ellul directly on the latter's home turf; he preferred instead to acknowledge the young Ellul's Marxist roots—while decrying his later departure from them.) Wartofsky, like all Marxists, was a lifelong opponent of *idealism* in all but some neo-Hegelian forms. On one occasion, at an SPT session at an American Philosophical Association meeting, Wartofsky explicitly took on the well-known neo-Kantian critic of technology, Hans Jonas, accusing Jonas of being unduly pessimistic, even in the face of the global challenges both of them worried about. In his well-received philosophy of science book, Wartofsky clearly opposed positivist philosophies of science—which put him in opposition to many of his friends in the *science* quadrant. However, in general, Wartofsky wrote so little explicitly on philosophy of technology that it might be better here to talk about ways in which a great many neo-Marxists continue to address technology in controversial ways. I have chosen to delay that until Chapter 12.