



Organización
de Estados
Iberoamericanos

Para la Educación,
la Ciencia
y la Cultura

Sala de lectura

Ciencia, Tecnología, Sociedad e
Innovación
CTS+I

Teorema Vol XVII/3
Filosofía de la Tecnología

teorema

**Philosophy of Technology in the
Americas in the last Twenty-Five
Years**

P. T. Durbin

Edición electrónica agosto 2000



Con el patrocinio de 



Philosophy of Technology in the Americas

In the Last Twenty-five Years

Paul T. Durbin

ABSTRACT

This article summarizes and analyzes some of the most important contributions to the voluminous literature in philosophy of technology that has been produced during the past 25 years in North, Central, and South America. (Major focus is on North America.) The survey emphasizes the variety of standards the authors have attempted to measure up to, and ends with a plea that, whatever the standard invoked, an overarching standard ought to be to contribute to the solution of real-world problems of technological society.

I. Introduction

In the Americas, North, Central and South, there has been something close to an explosion in the literature of philosophy of technology in the last twenty-five years. Since I have been the principal editor of most of the publications of the Society for Philosophy and Technology (SPT) during that time, a great deal of the work has passed through my editorial hands. I have always tried to assure that contributions to this body of literature meet the highest standards. But there is a problem here—namely, that these philosophers try to live up to very different kinds of standards.

Recently, I attended an international conference in Germany (Karlsruhe, May 1997; see Agazzi and Lenk, 1998) on «Advances in the Philosophy of Technology.» I will repeat here a short definitional survey I gave there.

I begin with the dominant view in United States philosophy departments at the present time. Like scientific advance, analytical philosophers assume, there can be philosophical progress, with one contribution building on others, and on and on. In the United States, this has become the ideal of academic progress.

However, once this academic standard was extended, by departmental committees and deans, to almost every field of higher learning, it began to come under attack. Critics maintain that, when the standard is applied in humanities fields such as literature, history, and the arts—and many of the critics would lump philosophy together with other humanistic disciplines—it is totally inappropriate. The only measuring rod we can use in these fields is greater and greater originality—especially in terms of persuading whatever are perceived to be the relevant audiences.

A few transcendentalist metaphysicians and theologians object to both the strict (progressive) academic standard and the much broader «originality» standard; they say both are retrogressive chasing after increasingly trivial minutiae. The only real progress moves in the opposite direction, toward more and more comprehensive syntheses—ever closer approaches to truth or beauty or goodness (sometimes capitalized as Truth, Beauty, and Goodness).

There are also «right-side-up» dialectical-materialist neo-Hegelians—and others—who insist on real social progress as the only appropriate standard.

Finally, still others insist on what I would call an Aristotelian model, recognizing that academic fields are divided along disciplinary lines, each with its own standards. At least some of the sciences meet the criterion of progress within limited domains; but most intellectual endeavors can make only «intensive» or «qualitative» progress, providing no more than a

deeper appreciation of, or new insights into, old truths, traditional arts and crafts, and also such newer methodologies as those associated with computers and other new technologies.

Judging The Literature By These Standards

If we now look at what has been accomplished in philosophy of technology in the Americas in recent decades, how should we judge it using these standards?

II. North American Philosophy Of Technology

A1. Analytical Approaches, I:

Nearly everyone agrees that the benchmark contribution to North American philosophy of technology is Carl Mitcham's *Thinking through Technology* (1994). And Mitcham's main contribution is taken to be his conceptual framework of (a) technological knowledge and (b) technological volition leading to (c) the technological activities of making and using (d) technological objects or artifacts (in the broadest sense). About this, Mitcham says (p. 160) that «a framework should be both definite enough to provide some guidance and open enough to allow for adjustments and the possibility of winding up with new ideas. If it is to be philosophical,» he adds, «it should raise philosophical questions while remaining hospitable to different responses to those questions.» And he thinks his framework (which he tentatively links to Aristotle's *Categories*) meets these standards.

Two things need to be said about Mitcham's analysis. One is that a number of analytical philosophers think the approach is fundamentally wrongheaded (however well intentioned); I will return to them in a moment (section A2, below). But the other side of the coin is that Mitcham's framework does build on earlier work.

First, Mitcham's analysis picks up on a number of European-based attempts to distinguish technology from science and to reassess the once-dominant view about the relationship between the two (assuming they are somehow distinct). The best known North American interpreter of Martin Heidegger's critique of technological culture is Albert Borgmann (1984, 1992). His «device paradigm» description of modern, technology-driven consumer culture, with its call to citizens of technological cultures to return to «focal things and practices,» has become a mainstay of North American philosophy of technology. Some even say it has generated the first genuine tradition—with younger scholars (e.g., Strong, 1995) expanding on the work of their mentors—in North American philosophy of technology. (A Borgmann *Festschrift*, edited by Higgs, Light, and Strong, should be published in late 1998 or early 1999.)

Heidegger was also an influence on Don Ihde (1979, 1983, 1990, 1993), perhaps the most prolific of American philosophers of technology. But a stronger influence on him was Edmund Husserl, and Ihde's most common focus has been on the way culture—including technological culture and its many instruments and gadgets—shapes perception. Ihde thinks of himself, thus, as a phenomenologist, and much of his work focuses on epistemological concerns. Ihde's phenomenology of technology is widely esteemed, and his version of a Husserlian approach is both unique and uniquely American. But it is not analytical in any narrow sense either.

The same is true of Langdon Winner (1977, 1986). The title of his first major book, *Autonomous Technology*, owes much to another European critic of technological culture, Jacques Ellul, though Winner gives the theory of autonomous technology a decidedly non-European turn. (In this pairing, Mitcham learned much more from Ellul than from Winner.) What Winner has become famous for is the theory he calls «technological politics»—that technologies should be critiqued not for their uses or misuses, but for the political structures built right into them—especially their authoritarian or anti-democratic features.

Although Mitcham's (re-)definition of technology depends, to some extent, on all of these philosophers, European and North American, he develops his own framework most immediately from earlier analytical frameworks provided by Robert McGinn (1978, 1991) and Stephen Kline (1985). What McGinn, Kline, and Mitcham are attempting to do is provide a set of characteristics that uniquely single out the institution of (modern) technology, distinguishing it from such other modern institutions as science, art, religion, and sports. And Mitcham's is the most comprehensive of such attempts.

However, it is possible to question whether or not the highlighted characteristics really differentiate modern technology from its closest neighbor institution, modern technologized science. (See Cordero, 1998, writing from an analytical perspective; also Barnes, Bloor, and Henry, 1996, representing a sociological perspective.)

A2. Analytical Approaches, II:

A totally different sort of analytical approach to philosophy of technology can also be taken. It is one that is unconcerned about characteristics alleged to differentiate between scientific and technological institutions and practices. Instead, the authors (e.g., Shrader-Frechette, 1980, 1991, 1993, and Cranor, 1993) take as a starting point actual methodologies used by scientific-technical experts—their favorite example is cost-benefit analysis; they then critique those methods, employing the standards of the strictest methods borrowed from philosophy of science. (Shrader-Frechette adds to this an ethical critique, challenging risk assessors to be more equitable and broadly democratic.) These contributions to North American philosophy of technology, without doubt, measure up to even the strictest standards of academic progress.

B. A Postmodern Critique:

North Americans have joined in the critique of science and technology—or «technoscience»—in the name of «postmodernism.» One particularly striking example of this approach can be seen in Gayle Ormiston and Raphael Sassower's *Narrative Experiments: The Discursive Authority of Science and Technology* (1989). The focus is clear in the subtitle: neither technology nor science should be accepted as authoritative on its own terms. The two go together, as «technoscience,» and its/their authority has been won in a discursive struggle within a cultural and linguistic context. What is more, science and technology have won out over competing narratives at a particular point (really, many points) in history; and their authority was achieved simultaneously with the legitimation of their modes of discourse. Finally, these modes of discourse are no more nor less cyclical than patterns in the humanities. At their most provocative, Ormiston and Sassower say that science and technology are not separate; they fall within the class of humanities disciplines or discourses.

It is against views of this sort that the most vociferous defenders of scientific and technological objectivity have railed (see Gross and Levitt, 1994). According to these critics of postmodern critiques, abandoning the standard of scientific objectivity does incredible disservice to legions of well-meaning—and successful—scientists and engineers. But there are also less extreme critics of the critical view, even within the broad range of science and technology criticisms labeled «postmodern,» and whose advocates tend to accept standards of progress less strict than the strictest of academic standards. (See, for a summary of such views, Rouse, 1996.)

C. Metaphysical Critiques:

Above, I listed Carl Mitcham among analytical critics of technology, along with neo-Heideggerians like Albert Borgmann or phenomenologists like Don Ihde. But the truth of the

matter is that almost all of the philosophers of technology in North America who have been strongly influenced by Heidegger or Ellul are not primarily interested in definitional or conceptual issues. Their true focus is on the place of philosophy, understood traditionally in a sense that gives primacy to metaphysics, within a world dominated by means rather than ends. They are culture critics, attempting to comprehend the world-taken-for-granted in mundane thinking. This is the only way to understand Heidegger's «existential» claims about a «framework» that constrains (modern) «technical thinking»—or, similarly, to understand Ellul's claims about «Technique» as the idol of our age (see Lovekin, 1991).

Mitcham (1994) ends his book with references to a «romantic» Heidegger: «In Heidegger's existential analysis there is a paradox, that the personal that is revealed through the technical is also undermined thereby» (p. 297). Although Mitcham recognizes «inherent weaknesses» in the romantic critique of technology, he clearly wishes they could be overcome.

What kind of standards does a metaphysical (or Heideggerian-existential) critique of technology invoke? Analytical philosophers accuse such metaphysical thinkers of retreating to the past. Hegel-oriented philosophers (see Verene, 1997) claim that a «comprehensive» approach is the standard that philosophers have always appealed to, down through the ages of Western philosophy.

D. Ethics and Technology:

I would like to, but it would be impossible to provide a brief summary here of the vast North American literature on applied ethics that touches on technology—from biomedical ethics to research ethics to computer ethics and environmental ethics. In the USA, engineering ethics (see Harris, Pritchard, and Rabins, 1995) and environmental ethics have suffered the same fate as applied ethics generally; that is, «purists» have tended to question the academic credentials of most (some would say all) engineering and environmental ethicists. They are, the critics say, not doing «real ethics,» but a less worthy application. (For a counterproposal in environmental ethics, see Light and Katz, 1995.)

E. Political Philosophy and Technology:

Once North American philosophers began to take technology seriously, the traditional view of technology as applied was rarely viewed as a serious alternative. Langdon Winner (1977, 1986), mentioned earlier, was one of the earliest philosophers to make this point.

Among North Americans writing about the politics of technology in the period covered here, I will refer to only two groups.

Marxists—and especially neo-Marxists influenced by Herbert Marcuse—argued that the ills of contemporary society, while they are related to technology and the social demands of living in a technological society, call for revolution if they are to be solved.

One neo-Marxist philosopher influenced by Marcuse, Andrew Feenberg (1991), has questioned this, arguing that it is possible to spell out certain conditions under which we might achieve a more just, worker-oriented society without revolution.

Arguing for social-democratic evolution rather than socialist revolution, North American philosophers of technology following in the footsteps of the pre-eminent American Pragmatist philosopher, John Dewey, have put their faith in piecemeal social reform as the way to keep technological ills under democratic social control. Larry Hickman (1990) is the leading spokesperson for this group. He wrestles with (and against) all the «metaphysical» thinkers mentioned earlier, arguing that the right kind of «instrumental rationality» can avoid the excesses of both the left and the right in dealing with technosocial problems.

My own work (Durbin, 1992) falls within this tradition of piecemeal social reform as a remedy for technosocial ills. What I appeal to is the success that progressive activists have had, and the hope that their success will continue in the future.

What sort of standards do praxis-oriented philosophers of technology appeal to? We tend to recall Karl Marx's statement that he was not so much interested in understanding the world as in changing it. Most Marx-based philosophers insist on wholesale, even worldwide, revolutionary change; we progressives will be satisfied if a reasonable number of local technosocial ills can be dealt with successfully, at least temporarily. Any more sweeping changes must start there.

III. Latin American Philosophy Of Technology

A. Parallels to North America:

Carl Mitcham (1993) has produced an invaluable summary of work in the philosophy of technology in Spanish speaking countries. A major portion of the work he has collected as representative of Latin America represents a strong parallel with recent North American philosophy of technology.

In Chile, Mitcham cites contributions by a Heideggerian, a neo-Marxist, and an analytically-inclined philosopher trained in North America. For Costa Rica, Mitcham includes philosophers trained in North America or strongly influenced by North Americans. I would hazard a guess that these philosophers, if asked, would want their work judged by standards similar to those invoked in North American universities.

B. A More Concrete Focus:

Other Latin American philosophers have been more concrete. In 1995, it was proposed that the Society for Philosophy and Technology should hold its next international conference (1996) in Mexico. The Mexican organizers chose to focus on a practical topic, «Technology, Economic Development, and Sustainability.» The resulting proceedings volume (see Martínez Contreras, Gutiérrez Lombardo, and Durbin, 1997) includes over a dozen contributions—just counting those by Mexicans—that are directly or indirectly related to the theme. Some of these philosophers focus on the concept of sustainability, others on ethics and sustainability, and still others on a variety of topics related to development and the environment (including women's issues).

Recognizing that each has his or her particular focus, it seems safe to say that the standard by which many of them would want to be judged is not academic. What they are concerned about is whether, and to what extent, philosophy can contribute to the solution of the environmental problems that have accompanied economic development initiatives in their country. (Other authors focused on other countries, not only in Latin America but throughout the Spanish speaking world.)

IV. Conclusion

What lessons might we draw from this survey? The most obvious lesson is that philosophers of technology, in both North America and Latin America, seldom have academic rigor as their primary focus. Some good work, following the lines of academic philosophy of science, does exist. But many more of these philosophers would prefer to be judged by other standards, and quite a few are critical of academic standards in the first place.

For my part, I believe the most important standard for all philosophers of technology ought to be practical. Will the philosophical work contribute, in any significant way, to the

genuine solution of urgent techno-social problems? The urgency of these problems is very great, and I think we all have a social responsibility, and a golden opportunity, to help deal with the problems.

University of Delaware

18512@UDel.Edu

References

AGAZZI, E., and H. LENK (1998), «Advances in The Philosophy of Technology: Proceedings of The Meeting of the International Academy for the Philosophy of Science, Karlsruhe, Germany, May 1997; Introduction,» *Society for Philosophy and Technology Quarterly Electronic Journal* [<http://scholar.lib.vt.edu/ejournals/SPT>], vol. 4, pp. 1-6.

BARNES, B., D. BLOOR; and J. HENRY (1996), *Scientific Knowledge: A Sociological Analysis*, Chicago, University of Chicago Press.

BORGMANN, A. (1984), *Technology and the Character of Contemporary Life: A Philosophical Inquiry*, Chicago, University of Chicago Press.

_____ (1992), *Crossing the Postmodern Divide*, Chicago, University of Chicago Press.

CORDERO, A. (1998), «On the Growing Complementarity of Science and Technology,» *SPT Electronic Journal*, vol. 4, pp. 23-34.

CRANOR, C. (1993), *Regulating Toxic Substances: A Philosophy of Science and the Law*, New York, Oxford University Press.

DURBIN, P. (1992), *Social Responsibility in Science, Technology, and Medicine*, Bethlehem, PA, Lehigh University Press.

FEENBERG, A. (1991), *Critical Theory of Technology*, New York, Oxford University Press.

GROSS, P., and N. LEVITT (1994), *Higher Superstition: The Academic Left and Its Quarrels with Science*, Baltimore, MD, Johns Hopkins University Press.

HARRIS, C.; M. PRITCHARD; and M. RABINS (1995), *Engineering Ethics: Concepts and Cases*, Belmont, CA, Wadsworth.

HICKMAN, L. (1990), *John Dewey's Pragmatic Technology*, Bloomington, Indiana University Press.

HIGGS, E.; A. LIGHT; and D. STRONG (eds.) (1998), *Philosophy in the Service of Things*, Chicago, University of Chicago Press.

IHDE, D. (1979), *Technics and Praxis: A Philosophy of Technology*, Dordrecht, Reidel.

_____ (1983), *Existential Technics*, Albany, State University of New York Press.

_____ (1990), *Technology and the Lifeworld: From Garden to Earth*, Bloomington, Indiana University Press.

_____ (1993), *Philosophy of Technology: An Introduction*, New York, Paragon Press.

JOHNSON, D. (1991), *Ethical Issues in Engineering*, Englewood Cliffs, NJ: Prentice-Hall.

KLINE, S. (1985), «What Is Technology,» *Bulletin of Science, Technology and Society*, vol. 5, no. 3, pp. 215-218.

LIGHT, A., and E. KATZ (eds.) (1995), *Environmental Pragmatism*, London and New York, Routledge.

MARTÍNEZ CONTRERAS, J., R. GUTIÉRREZ LOMBARDO; and P. DURBIN (eds.) (1997), *Tecnología, Desarrollo Económico y Sustentabilidad*, número especial de *Ludus Vitalis*, Mexico City.

McGINN, R. (1978), «What Is Technology?» *Research in Philosophy and Technology*, vol. 1, pp. 179-197.

_____ (1991), *Science, Technology, and Society*, Englewood Cliffs, NJ, Prentice Hall.

MITCHAM, C. (1993), *Philosophy of Technology in Spanish Speaking Countries*, Dordrecht, Kluwer.

_____ (1994), *Thinking Through Technology: The Path between Engineering and Philosophy*, Chicago, University of Chicago Press.

ORMISTON, G., and R. SASSOWER (1989), *Narrative Experiments: The Discursive Authority of Science and Technology*, Minneapolis, University of Minnesota Press.

ROUSE, J. (1996), *Engaging Science: How To Understand Its Practices Philosophically*, Ithaca, NY, Cornell University Press.

SHRADER-FRECHETTE, K. (1980), *Nuclear Power and Public Policy*, Dordrecht, Reidel.

_____ (1991), *Risk and Rationality: Philosophical Foundations for Populist Reform*, Berkeley, University of California Press.

_____ (1993), *Burying Uncertainty: Risk and the Case against Geological Disposal of Nuclear Waste*, Berkeley, University of California Press.

VERENE, D. (1997), *Philosophy and the Return to Self-Knowledge*, New Haven, CT, Yale University Press.

WINNER, L. (1977), *Autonomous Technology: Technics-out-of-Control as a Theme in Political Thought*, Cambridge, MA, MIT Press.

_____ (1986), *The Whale and the Reactor: A Search for Limits in an Age of High Technology*, Chicago, University of Chicago Press.