PHILOSOPHY AND TECHNOLOGY AFTER TWENTY YEARS

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If we take the twenty years in our topic quite literally, our common starting point is 1975, which happens to have been an important year for me in my relations with philosophy and technology. Since the hills and valleys we travel on our personal journeys greatly influence our ways of looking at the landscape we finally reach, I shall review the highlights of my path to the present over the last two decades. In this I hope to share one personal perspective on our common fields of interest. I do not claim that either my outlook or the journey that brought me here is typical, but that is of no importance; mine is at least one possible way of seeing, and if sharing it enlarges anyone's view, I am content.

In 1975 I found myself at Purdue University, the second Eli Lilly Visiting Professor of Science, Theology, and Human Values. I was participating in the short series of these interdisciplinary University Professorships that began with Ian Barbour in the previous year and ended with Victor Ferkiss in the next. My work in philosophy and technology during the previous decade must have had something to do with the invitation from Purdue and the Lilly Foundation to occupy that unusual chair during 1974-1975, but those earlier years lie outside the scope of this program and I do not intend to discuss on that work itself. It is relevant, however, to note the general motives—personal and professional—that brought me into the field during the 1960s. They are basic, and they continue to play a key role during the two decades that lead to the present.

I began my philosophical career, fresh from graduate school in Britain, as an analytical philosopher of religion. I was (and remain) interested in the logic of language, and in the early days I was mainly motivated to understand religious discourse in comparison with the language and logic of science. In those background years I came to an understanding of religious discourse as above all value-expressing, but with an ineliminable referential or metaphysical component. Scientific discourse, conversely, I concluded, is above all referential, but with an

ineliminable general theoretical context that is profoundly value-laden. To these basic professional findings I added in the mid-1960s an urgent personal concern for environmental problems. With a physicist colleague, some years before the first Earth Day, I developed a course in Environmental Studies that took with equal seriousness the factual and the valuational components of our unfolding crisis. After a few years of teaching this course, it became clear to us that human population and human technology are the two primary ways by which our species has its impact on the planet. I focused on the technological side in a new Philosophy Department course I called "Technology and Values." Working along these lines, originally in search of origins of the environmental crisis, I became convinced that technology is based on two necessary components: it must be motivated by some human *values* (preferences, fears, hopes, etc.), and it must rest on some human *knowledge* (family recipes, craft traditions, and, more recently, powerful theories of nature). Here, at one of the most sensitive pressure-points between Homo sapiens and the earth, I found the practical implementation of fundamental *values* and basic *knowledge*—the implicit domains of religion and science—catalyzing enormous environmental impacts.

By the time I reached Purdue, at the start of our time-frame, I was dismayed at the failure of the philosophical profession to take technology with the urgency and seriousness with which I had come to consider it. I remember corresponding with Edmund Byrne, in nearby Indianapolis, commiserating on the failure of the Philosophy of Science Association to give adequate attention to technology. I wrote that year to the PSA program planners, urging more attention for the sake of members like me and for the sake of waking up other members, but I recall receiving only grudging responses. Technology, I learned, was held to be “not philosophically interesting.”

At Purdue itself, I found a different atmosphere. As Lilly Professor, I was not technically in any department or college, but I was kindly housed with my colleague philosophers, who gave me plenty of support for my efforts in teaching an enlarged version of my technology and values course. Students, too, from philosophy as well as other areas of Arts and Sciences, showed keen interest in viewing technology through philosophical lenses. But in my first semester I found that in this mecca of engineers I had drawn no engineering students at all! Philosophy, it seemed, was without much *engineering* interest.

Luckily, however, my course had drawn as a working auditor one young professor of chemical engineering who was sufficiently enthusiastic to propose that we team-teach the course in the second semester—but in the chemical engineering building. The course filled to capacity and ran to rave reviews; but, to my amazement, this time it drew *only* engineers! Now I can propose another meaning to add to Carl Mitcham's play with "philosophy of technology." Besides the "subjective" genitive (indicating the philosophy generated by and belonging to technology) and the "objective" genitive (philosophy's look at technology as its subject matter), there is the "departmental" genitive of sheer turf: the philosophy that goes on in *our* building under *our* course number.

I have tried hard not to forget this lesson in the grammar of possessives, which may even underlie a substantial part of the other two genitives Mitcham rightly distinguishes. When, for example, I went to Vanderbilt University for a visiting year in 1977-1978, to share my time between their Philosophy Department and their School of Engineering, I was issued a turf-satisfying title to go with each: "Visiting Professor of Philosophy" from Arts and Sciences, and "Visiting Professor of Technology and Public Policy" from the School of Engineering. This seems to have worked out well. Within the School of Engineering, where I taught "Technology and Values" to overflow capacity and with the assistance of two faculty members, one drawn from each domain, I was again impressed at the eagerness of engineers to see their discipline and their lives from mainstream philosophical perspectives, epistemological, metaphysical, and ethical. Well, not *all*, perhaps. One engineering student came early in the semester to request a withdrawal form. I agreed, of course, since I am opposed to involuntary servitude; but, in return, I wanted his reason for departing. "I don't like to think about ideas," he said, reluctantly. "But," I replied, "the main thing is to get clear about your own ideas, not so much those of others." "That's just it," he finally blurted, as he got up to go, "I especially don't like to think about my own ideas."

But that is the exception to the overwhelming rule; in my experience, engineering students appreciate, even crave, the unmitigated, full-strength philosophical tradition, relevantly presented, as it challenges, stretches, and connects their thoughts about the technological world in which their careers, as well as their persons and descendants, are ineluctably set. During the decade from 1975 to 1985, I taught "Technology and Values" as well as other courses in

philosophy of technology in a variety of turf settings. These included (in addition to Purdue and Vanderbilt) a small, liberal arts college, three theological seminaries (one on the East Coast, one on the West, and one in the Rocky Mountains), a midwestern technical community college, and the large research multiversity to which I am now attached. Everywhere I found different students, different expectations, different professional outlooks, but deep and even urgent fascination by what can be learned from fresh application of old questions that are both critical and comprehensive about technology and knowing, technology and being, technology and living. On every patch of turf, that is, I found that the basic, traditional philosophical questions speak to what is shared by human beings beyond the confines of their particular turf locations. Whether people are actively engaged in shaping technology, as engineers, or simply caught up in a pervasive technological culture that shapes them, they are above all (or beneath all) people. And it is to people in their most vulnerable humanity—imperfect knowers, uncertain believers, reluctantly responsible agents—that the great traditions in philosophy speak.

In the decade 1985-1995, I had more opportunities to prove my rule and apply it to wider audiences. At the University of Georgia in these years, I have drawn mind-bogglingly diverse groups into "Technology and Values," and despite the pedagogical challenge involved in creating a common playing field for foresters, psychologists, mathematics education specialists, majors in art, comparative literature, music, landscape architecture, speech communication, law, microbiology, botany, ecology, religion, philosophy—and more, I have found that within two weeks, or less, turf is forgotten and all that matters is getting a profound enough grip on technology's many facets. Everyone can bring something. Everyone can be a giver as well as a receiver. Philosophy of technology can be and is a binder of breaks in the curriculum, a bridger of gaps between specialists, a challenge to ethical examination, and a stimulus for social reform and political action.

The larger audiences I hoped to reach with this approach to philosophy and technology during the more recent decade were targeted through a book and a journal. The book was *Philosophy of Technology*, written in Bavaria under Chernobyl's cloud in 1986, and published by Prentice-Hall in the Foundations of Philosophy series in 1988. The journal was the scholarly annual, *Research in Philosophy & Technology*, of which I was general editor, following Paul Durbin,

from 1986, and continuing until 1994, when Carl Mitcham agreed to take the helm.

What I tried to do in the book has had a mixed reaction. Some people—including some on this panel—did not much approve. An earlier program of this Society allowed the airing of views pro and con. Others found it valuable enough for their classes and for their personal thinking to warrant a new edition, published by the University of Georgia Press, in September 1995. Clearly my approach to philosophy of technology, with the beliefs and values that have guided me for the past two decades, is not everyone's cup of tea. Still, they are my beliefs and my values; and just as they have led my teaching over the years, so they have undergirded both my authorship of *Philosophy of Technology* and my editorship of *Research in Philosophy & Technology*. I conclude these remarks, therefore, with a short credo.

1. I believe that philosophy of technology should unite philosophical thinking about technology with the main philosophical traditions of the West.
2. I believe that technology and the technological culture we inhabit can be fruitfully illuminated by applying categories from epistemology, metaphysics, ethics, aesthetics, philosophy of religion, philosophy of science, social philosophy, and the like.
3. I believe philosophy of technology should be hospitable to a generous pluralism in its understanding of what counts as legitimate philosophical approaches.
4. I believe a comprehensive, critical pluralism of philosophical approaches to technology and the technological society can make a positive difference in improved self-understanding and social policy.

Does this describe the actual shape of philosophy and technology after twenty years? It would be naive to be too optimistic. Carl Mitcham's *Thinking through Technology* (1994) shows clearly how fragmented in values and approaches we are. But one person's fragmentation can be another's developing pluralism—if the fragments manage to—talk to one another with respect and good will. And this ability, to talk and to hear each other, surely has increased over the past twenty years. As a field we are a lot closer to the ideals of my credo than we were when we had to beg (vainly) to the Philosophy of Science Association for technology's place in the sun. And as we talk and listen together, in symposia like

this one, perhaps we will prove to my engineering drop-out student that it is not always fruitless to "think about our own ideas."