

ON THE PHILOSOPHY OF TECHNOLOGY, PAST AND FUTURE

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It is true that work in the philosophy of technology predates the founding of the Society for Philosophy and Technology (SPT), and probably would have managed to struggle on even if SPT never came into existence. Philosophers and social thinkers did think and write about technology prior to 1975. Plato directed attention to crafts, Galileo to the media scientia, Heidegger to whatever. But I am not so sure that work in this area would have developed in the way it has without SPT. The Society for Philosophy and Technology has contributed in significant ways to the field known as the philosophy of technology, but not always positively. Further, today, work in the philosophy of technology is at a crossroads. The direction SPT takes will make the difference between seeing the philosophy of technology flourish or seeing it become marginalized. The marginalization of the philosophy of technology is a theme I have articulated on a number of occasions. I will rehearse some of the old concerns below. But my old worries are not the main worry addressed here. What I want to direct our attention to is the fact that philosophers of science are moving rapidly into our territory, and they are doing so without the baggage we in SPT have carried for so long. If we don't get our act together, we may find that we have been scooped in a fundamental way, one which removes from our purview an area of research we should be moving into, leaving us with only the irrelevant leftovers of our past efforts. But before I play Cassandra, let me give some of my personal perspective on the developments of the last twenty years, good and bad.

Let us look at the good first. From the start I want to make it clear that SPT has made a significant difference to work in the philosophy of technology. And to do as I will do, rehearse the obvious, is not to denigrate it. To begin with, the Society for Philosophy and Technology has provided a legitimate platform for scholars working in this area. We all know how important it is in the eyes of deans and department heads to have our work sponsored by recognized national and international organizations.

SPT has sponsored nine biannual international conferences, a book series, and is now creating a new electronic journal. In so doing it has brought together scholars from all around the world, fostered communication and research among them and brought focus and direction to work in the field. All of this is good. I would also like to think that through these various ventures, we have been able to raise the quality of work in the philosophy of technology.

But despite what are unarguable signs of success, there is something wrong with the above picture. Some of what is wrong is a matter of perception—namely how we are perceived by others. But the trouble lies deeper. It is not merely a matter of perception. I will argue that we have a serious problem which I shall identify as a crisis of intellectual integrity. Others may not like my phrasing and may choose to view the situation differently. I, however, will try both to explain and to justify this claim. And while I tell my students to leave personal anecdotes out of their papers, what follows is largely based on my personal experience. I will not try to make it seem otherwise, and in the light of what my fellow symposiasts have offered, this seems an implicitly acceptable procedure.

I am not sure what got me involved in SPT and into the philosophy of technology. I have a better account of what got me interested in technology, so let me start there. My interest in the philosophy of technology comes out of my efforts to create an interdisciplinary undergraduate program called Humanities, Science and Technology at Virginia Tech in the early to mid seventies. This began as a small thing. Homer LeGrand and I wanted to list his history of science courses and my philosophy of science courses together in the timetable so that our students could see that there were other places to go after having taken a history of science course or a philosophy course. University bureaucracies being what they are, we eventually did something very different, ending up with a full scale interdisciplinary undergraduate program. And Homer has long since gone to Australia. In developing courses for this program and in working with others in the program, it became abundantly clear to me that if we were going to talk about technology and humanities, we were going to have a difficult time finding relevant literature for our students to read. There was no canon. When I wrote or spoke to colleagues at other

universities, there was no obvious place they all sent me, no single "must-read" article.

That situation remains true today. There still is no canon. This, in itself, should be a major source of concern. It seems to me that disciplinary coherence starts with the emergence of a consensus that whether or not you agree with what he or she said, so-and-so's article or book cannot be ignored. In other words, the canon is the starting point. In the philosophy of science, it might be Wittgenstein's *Tractatus*, or possibly Carnap's *Aufbau*. In the contemporary interdisciplinary field of Science Studies is Kuhn's *Structure of Scientific Revolutions*. There is no such starting place for the philosophy of technology. There is nothing we have or can agree on that we all must read, even if we disagree with its fundamental tenet. There have been several attempts to meet the requirement of a canon, or to create something to fill the need. Such claims have been made for Heidegger's *Question concerning Technology*, but this is at best a cult item, not a significant philosophical text. More recently there have been serious attempts to identify the relevant literature and areas of discussion. Carl Mitcham's early anthology was one. Durbin's handbook is another. But, with deep apologies to their authors, despite their best efforts, and as good and useful as these works are, they have failed to achieve the status of a canon. But without an agreed upon literature, we can hardly make good the claim to have a legitimate field of study. Clearly this is an unfinished task with a clear call for future work. So, without a determinate literature to study, which lays out the problems and the methodologies to employ, I started looking for conferences and groups with the word "technology" in their titles. That is what got me to attend a session on the philosophy of technology at some APA meeting and then to attend the second conference of the Society in New York in 1983.

Now while philosophy of technology was being done at these convenings, it was troublesome to my ears. First, I learned that to do work in this field you had to know about Heidegger. So I read Heidegger, which left me very confused, both as to what he had to say, and why it was relevant. I was familiar enough with phenomenology to understand that this approach was simply not the way I choose to do philosophy, but that alone was not sufficient reason to ignore Heidegger. The basis for rejecting

Heidegger as a legitimate candidate for the canon was the incomprehensibility of the text. But to reject Heidegger for the canon is not to reject phenomenology as a legitimate philosophical methodology; employed by wise and articulate practitioners, it can contribute to our understanding of the range of philosophical problems surrounding technology, as witnessed in the work of Don Ihde. Nevertheless, I was perplexed by the absence of "my" type of philosophical concerns in these discussions. What does that mean? I was trained as an analytic philosopher of science. In the last twenty five years, my interests have broadened considerably. Nevertheless, there remains at the bottom of my philosophical conscience a quest for an analysis of knowledge which explains the special success of science. I also need to understand how things human change and whether or not those changes can, or should be, the result of some rational process.

So I looked for other discussions. I found two, one which made sense to me, and one which I understood, but which seemed inadequate to the jobs which could be set on the table of the philosophy of technology. The discussion that made sense was Kristin Shrader-Frchette's attempts to critique risk assessment methodologies. She provided arguments, counter-examples, and rigorously thought through alternative methods. But there was surely more to the philosophy of technology than risk assessment. So as congenial as what Shrader-Frchette was doing, it seemed inadequate.

The second type of discussion I found I understood seemed inadequate in a different sense. This was the work of what I now call "the social critics." It seems that a lot of philosophers working in the philosophy of technology see their philosophical job exclusively in terms of identifying and bemoaning the impact of technology on society. Now social criticism is a long and honored professional activity. There is nothing wrong with it. But for some it appeared to be the only function of philosophers interested in technology. That may appear too strong a claim, so let me try to justify it.

I am going to take what may seem to be a detour here, so please bear with me. A number of years ago there was a conference on the history and philosophy of technology at the Technical University of Eindhoven.

This provided me with the opportunity meet a number of prominent historians of technology. I was then vice-president of SPT, and I was trying to think of ways to integrate the Society more into other ongoing discussions. One thing I thought we might do is organize a conference together with another society. There had been a number of successful conferences in which the Philosophy of Science Association, the History of Science Society, the Society for the History of Technology and the Society for Social Studies of Science met together or in doubles or triples. I had attended a number of these and found them extremely exciting. So on the long bus ride to a wonderful country museum, I suggested this to a major figure in the Society for History of Technology. He responded in horror. "Oh, no!" he said, "those SPT people hate technology. Further, they know nothing about technology. What would we have to say to them?" This was where I first saw the problem of intellectual integrity as a problem for SPT.

This was also a turning point for me. As I tried to find scholars working in the field who were either pro-technology or even neutral with respect to the impact of technology, I realized my historian colleague was probably right. And it made me very sad. Is it really true that the only interesting philosophical problems about technology are the problems associated with social impact? Is it true that my colleagues in SPT are nothing more than mere technology-bashers? If so, this did not bode well for the Society. For instead of being a philosophical organization, dedicated to exploring and extending techniques of philosophical discussion to the range of problems raised by technology, we were seen as some sort of political/ideological organization. The consequences were, for me, quite unacceptable. To be viewed as only an advocacy group, not for but against, meant that we really wouldn't be taken seriously by the rest of the philosophical community. It meant that our problems wouldn't be included in the range of legitimate philosophical problem areas. We would cease to be part of the philosophical community; instead we would be marginalized to the fringe.

Now, don't get me wrong. There is nothing wrong with being concerned about the adverse impact of technological developments. Nor is there anything wrong in actively being engaged in trying to avert those consequences. Just to show I am not a total philistine, I will confess

that I have been extremely active in local campaigns to stop the building of an interstate highway through my farm, and also in trying to stop the building of a 765 kilowatt electric line over my farm. I can be as anti-technology as anyone. But to limit your philosophical horizons to just those issues is to lose sight of what it is to be a philosopher. And for SPT to be viewed, rightly or wrongly—remember, I said this was to some extent a matter of perception—as a narrowly concerned social advocacy group, is to open us up to rejection by the broader philosophical society. Our situation is no different from the Society of Christian Philosophers when they decided to make the legitimation of Christianity their agenda. We are seen as having merely a negative objective. Intellectual integrity requires honesty prior to ideological agendas. It means acknowledging our pet peeves for what they are and not confusing our personal frustrations with universal wrongs. The philosophical tendency to seek universality has to mean more than the mere justification of petty egos.

Wilfrid Sellars was right. The aim of philosophy is to see how things, in the broadest possible sense of the term, hang together. Technology or, as I prefer to discuss it, the set of technologies at our command and under development, is the single most important feature of modern, if not all, society. We, as philosophers, need to do more than complain about technology. We need to develop the means to incorporate our knowledge and understanding of technology into how we see the world hanging together. We must study the histories of our technologies, the epistemological assumptions they embody, their social impact, the impact of social factors on both epistemological assumptions and on our values and value structures. Above all we must study the technologies themselves. If the set of technologies we command are central to our way of life and to our future, if they reflect our value system, or even if they merely affect the economic structure of our society, we need to know what this means and how it happens. Our problem as philosophers has been in assuming that technology is an add-on, an obstacle to some other vision of the good life, one that starts with a self-proclaimed moral imperative. But there are no self-proclaimed moral imperatives. To assume so is to ignore the history of human development and the extent to which it is tied to the technologies we have employed to improve the human condition. It ignores the extent to

which the direction we have taken in creating our visions of the good life and of the future have been a direct function of what we have thought is possible. What we have thought is possible has been crucially constrained by the technologies at our command or by our imagination. What we have thought human beings should do has always been a function of both a theory of human nature and a theory of human capacity. This latter essentially ties everything we do and think humans can and should do to our technologies, i.e., to our ways of making the world conform to our visions of the good. In this sense, then, our technologies embody our aspirations, as well as our accomplishments. To ignore this is to ignore our history. It is to fail to see how it all hangs together. It is not good philosophy to simply assert that we are the dupes of power hungry megacorporations and then on the basis of that assumption build an emotional case to prove it. This is not to say that good philosophy is value free or in some sense neutral. In many cases good philosophy consists in ferreting out the value assumptions which allow arguments to go through to conclusions which jar our sensibilities, sensibilities which themselves embody value judgments. Values are part of our lives, philosophical or otherwise, but they need not rule us with impunity. Good philosophy requires that everything be up for grabs, that all assumptions be ready for attack. To hold privileged a particular moral stance with respect to technology is to do bad philosophy, and if we do bad philosophy we should be held suspect by the rest of the intellectual community.

Well, to quote the best philosophers around today, the car guys, enough ranting and raving. I would like to suggest a direction for future research in the philosophy of technology, which if I am correct will allow us to squander our emotional capital on all the social impact issues we love and to still do good philosophy. And to admit that I am not opposed to political philosophy, I am going to take a page out of Machiavelli. If nothing else will make us sit up and behave, the threat of outsiders coming in and taking over our turf should. In case anyone is not aware of it, we are being challenged. There is a movement in the philosophy of science which threatens to render passé what we do as philosophers of technology. I am referring to that group of philosophers of science called the New Experimentalists. These philosophers are directing their attention to that most central of features of science, the experiment. They are

attempting to see how epistemological assumptions are embedded in the instruments used in experiments. They are concerned about the ethical dimensions of experiments. They are concerned about the extent to which we can point to experimental evidence for the existence of unobservable entities. And some, like me, are looking at the extent to which the technological infrastructure of science not only affects theory, but commits us to certain courses of action, thereby providing a basis for a new theory of both technological and scientific change, which is at bottom a theory of social change. How does this differ from what we do? It does not depend on a single methodology. It relates concerns about technology to science and through science to society in general, thereby avoiding charges of ad hocery. It forces attention on two crucial issues. (1) the naiveté and dangers of reifying technology. Too much of what philosophers of technology do is talk about technology as if it were a single thing. When you look at the details, and yes, the devil is in the details, it isn't "technology" the thing, that does terrible things, it is people. (2) Moral judgments about technology, to be effective, must be based on a solid understanding of the epistemology of the context in question. We leap to moral judgments at our peril.

Much of what I have said here is cryptic. I will be happy to explain in detail or direct readers to others who can do it better. But I want to be perfectly clear about one thing. We cannot claim to be the Society for (and I stress the "for") Philosophy and Technology and continue as we have for the past twenty years. We cannot be that society and be against technological developments. This is not to say we should be cheerleaders for technological change. That would be just as inappropriate. For and against technology is not the issue. How to talk about the role of our technologies in our culture and in our lives is. In the same way that evolution is a fact, technologies are facts in our lives. We need to talk in an informed and sensible manner about how our technologies make us what we are and what we can be. And we must stop bleating about Technology with a capital T. In short, we must turn our attention to seeing how it all hangs together as philosophers, not as ideologists, or risk being ignored and having our concerns taken over by others who are willing to address that issue and who don't give a damn about SPT.

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