PHILOSOPHY OF TECHNOLOGY AFTER TWENTY YEARS: A GERMAN PERSPECTIVE

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My review of the development of the philosophy of technology in the last two decades concentrates on the general philosophical discussion in Germany. Generally speaking, one can note an *increasing interest* in the philosophy of technology: it remains a marginal field, but there has been a gradual growth in acknowledgement in the academy, as well as in the intellectual community at large, marked by sessions at recent philosophical meetings, courses in the Open University, and newspaper articles. Since the rate and scope of technological innovation are hardly decreasing, we may assume that the philosophical interest will also continue.

Concerning the internal development of the field, one can—roughly speaking—observe a trend towards *diversification,* as well as a growing interest in *praxis-oriented approaches* instead of speculative ones. These two trends comprehend the following five points:

1) The intellectual structure of the field remains *diverse, multi-dimensional,* and anything but uniform or standardized. This is hardly surprising, since the subject-matter, i.e., the philosophical issues of modern technology, has not changed in principle and is today perhaps even more complex than it was twenty years ago. This diversity is borne out by the fact that many of the recent publications in the field are not monographs, but readers composed of heterogeneous articles to which the term *Buchbindersynthese* is often applied, indicating that they have perhaps the kind of unity Aristotle ascribed to a heap.

2) Naturally enough, the borders with other, related fields are still open. These fields, especially sociology, political theory, and economics, are empirically and practically oriented, rather than theoretical and speculative. With his systems-theoretical approach to technology *(Eine Systemtheorie der Technik,* 1979), Günter Ropohl tries to bridge the gap between philosophy and sociology. In so doing, he includes the social-historical reconstruction of the process that leads to technological innovations. It is hoped that, with the help of this so-called

Geneseforschung, one may find ways of deliberately shaping—and possibly controlling—the development of technological innovations.

3) Naturally, there is an increasing interest in the *ethical problems* of technology. But these questions are usually treated from the point of view of a particular ethical theory and with reference to a specific field of application. Only a few books (Jonas, Hubig) deal explicitly with the fundamental ethical issues of technology within a general framework. *Technology assessment* is a special case. In this area there has been a clear growth in both quality and quantity. By now the fundamental conceptual problems have become more or less clear. The actual problems of conflicts of interest and of how to implement a given solution remain, however. This being the case, the accent has shifted, for example, to the quantification of priorities and strategies of implementation, as well as to trouble-shooting, i.e., mediating between the interests of opposing groups.

4) The practical orientation of recent work is also evident in the growing attention given to the *problems of ecology and of limited resources.* The very nature of the questions involved in this area often makes it difficult to distinguish between the three elements involved: fundamental ethical positions, political interests, and scientific questions of both an empirical and theoretical nature. The *Green movement* is now part of the political establishment, and it is tellingly split into two camps, the theory-oriented fundamentalists and the pragmatically-minded realists *(Fundis* and *Realos).* There are also controversial philosophical attempts to arrive at a caring attitude towards Nature and an ecologically-minded treatment of the environment by deliberately introducing an appropriately designed "holy" concept of Nature (Meyer-Abich, Spaemann).

5) *I myself* have moved from the *Analytical Philosophy of Technology* (1978), which was written with a view to engineering and technological innovations, to a more traditional philosophical interpretation of technology. My colleague Günter Ropohl criticizes this shift as treason against the *realist turn.* He argues that, henceforth, philosophical interpretation should be based on the `real features' of technology, instead of the metaphysical interpretations of Dessauer and Heidegger. I am thus in the lonely position of stressing a philosophical and even speculative approach in opposition to a more empirical, practically-oriented one.

In my recent book, *Die Dynamik der modernen Welt* (1994), I argue that today the philosophy of technology must above all deal with two problems. First, it must explain the dynamics of technological change, thus indicating ways in which we might interfere in "technological determinism." Without an understanding of the origins of technological change, we can hardly expect our ethical postulates to have any practical application. Second, the philosophical interpretation of technology must draw on and strive to be integrated into the philosophical tradition. Metaphorically speaking, this is the soil from which any philosophical interpretation must grow. Not to draw on this base and instead to try to re-invent the wheel for purposes of the philosophy of technology is foolish. In fact, I maintain, philosophy does provide points of reference for a *naturalistic,* a *rationalistic,* and a *cultural* interpretation of technology. These approaches, then, should be supplemented by a *metaphysical* interpretation, be it in terms of the will to power, the history of being, or technology as the myth (and fate) of our time.

Three further points also deserve attention:

6) No one who is familiar with the relation between monolithic political power and intellectual life will be surprised to learn that after the *Wende,* that is, the reunification of the two formerly separated parts of Germany, the Marxist-Leninist philosophy of technology that was the official doctrine of the *German Democratic Republic* has virtually disappeared. For the most part, this also holds good for the other countries of the former Eastern Bloc. Of course, a non-orthodox, scholarly Marxist or materialist interpretation of the philosophy of technology has always existed in the West and will continue to exist. The question now is whether the breakdown of the Eastern Bloc will in the long run have a negative influence on the spread of this philosophical doctrine.

7) Perhaps due to its rationalist tradition, the philosophy of technology *in France* has developed along different lines than in Germany. There too there is no unique, standard interpretation, but rather a broad spectrum of approaches. On the whole, a more positive attitude to technology has led to a more optimistic philosophy of technology. Simondon argues in favor of integrating modern technology into culture; Moscovici extends the ideas of Marx and claims that not technological systems, but rather the invention of work, interpreted as method-oriented creative activity, is the essence of modern technology. On the other

hand, Ellul gives a pessimistic scenario in which the all-encompassing power of technological change alienates man and destroys nature.

Certain areas which have emerged only recently are now moving into the center of intellectual debate. Among these new areas are: *ecology;* the *globalization of technology,* i.e., the formation of a unified planetary supercivilization; *information technology; artificial intelligence; multi-media; medical technology; genetic engineering.* These areas tend to be treated on their own as separate subjects. However, we should insist that, while the new horizons they open demand separate investigation, these themes also give rise to specific philosophical questions that will require philosophical answers.