Philosophy and Technology

EDITED BY

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Introduction

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The essays collected here do not constitute a philosophy of tech-
nology, in the sense which, for instance, Don Ihde requires.
According to Ihde the philosopher of technology must reflectively
analyse technology in such a way 'as to illuminate features of the
phenomenon of technology itself'.[1] The contributors to this vol-
ume do not concern themselves with the essentialist enterprise of
defining technology; they more or less take it for granted that the
reader is familiar with a variety of technologies such as
Information Technology, and proceed from there. Hence the title
is the conjunctive one of *Philosophy and Technology*.

That contemporary philosophy has become more self-con-
sciously concerned with the impact of technology on human
nature and society is undeniably. Witness for instance the philo-
sophical growth areas of Environmental and Medical Ethics. This
interest is surely in part a consequence of environmental disasters
such as the Chernobyl nuclear accident, and advances in medical
technology such as organ transplantation. Again, advances in com-
puter science and technology have suggested new ways for self-
understanding and the re-organisation of society.

The modern world contains a vast array of technologies, and the
contributors to this book respond to some of them with different
concerns, so there is no one underlying theme running through-
out. Nevertheless, one may discern that, in general, the contribu-
tors adopt one of two approaches. The first is concerned, quite
generally, with the impact of technology on culture and society,
and the second is concerned with philosophical questions raised by
particular technologies. The papers by David Cooper and Stephen
Clark exemplify the former approach, and the contributions by
Willem Hackmann and Sophie Botros the latter.

David Cooper addresses the question of whether technology is a
force for liberation or enslavement. He disentangles various issues
connected with liberationalist and enslavement claims about con-
temporary technology. His main conclusion is that Western tech-

* The essays in this volume derive from papers delivered at a Royal
Institute of Philosophy conference held at the University of Bradford in
July 1994, on the theme of Philosophy and Technology.
[1] Don Ihde, *Philosophy of Technology* (New York: Paragon House,
1987), p. 38.

nological societies have eroded the notion of the self conceived of as an autonomous entity, enmeshed in a system of rights and responsibilities. The issues raised by Cooper are important: consider for instance IT, and, in particular, E-mail and the Internet. On the one hand, as Cooper notes, it might be thought that we are possessed of a technology which enhances our freedom by enabling us, for instance, to 'E-mail' our objections to, or support for, a certain policy directly to 'Government'. But, on the other hand, Cooper rightly enquires whether a Government which responded to 'grouses and grumblings' on E-mail would be behaving responsibility. The problem here has to do with a severance between a technological ethos ('here is a computer which enables you to complain to the centre'), and a sense of the moral, the political and the aesthetic about which E-mail in particular, and IT in general, are silent. IT does not help in giving the citizen the intellectual and moral groundings which are the necessary conditions for its humane use. It may even mitigate against the inculcation of these virtues, because of the solipsistic potential inherent in a work force of persons tapping away at computer keyboards in their own homes.

The papers by Smithurst, Hackmann, Hendry and Cartwright are all concerned, in different ways, with the relations between science, technology and reality. Smithurst discusses the question as to whether successful technologies confirm the truth of scientific theories, and failed technologies refute them. We might think, for instance, that our ability to send a spacecraft to the moon confirms classical mechanics. Smithurst argues that the relationship between our technologies and our theories is not like that between observation and theory. Imagine that all the scientific instruments developed since the seventeenth century were to vanish overnight. Then, says Smithurst, our scientific theories would rapidly degenerate into metaphysical myths with the same status as the atomic theories of Leucippus and Democritus.

Hackmann focuses on the role of instruments in the study of nature. He provides an illuminating and detailed case study of our understanding of the phenomenon of the aurora borealis by concentrating upon the interplay between theory and experimental apparatus. Like Smithurst, Hackmann sees an indissoluble link between theory and technology, and he ends his paper with a conceptual tension produced by the history of scientific instruments. As we become ever more reliant on scientific instruments in the investigation of nature, so do we become increasingly more estranged from nature. Bertrand Russell quipped that naive realism leads to physics and the truth of physics entails the falsity of naive realism. Russell had in mind for instance the point that our common sense ideas

about simultaneity are overthrown by Special Relativity theory. Hackmann's point is rather that we study the world behind a barrier of instruments, which serve to insulate us from nature.

In his contribution, Hendry urges that scientists should not be instrumentalists, but ought rather to adopt the position of the methodological realist: if our most relevant theory posits the existence of quarks then we should believe that quarks exist. For the scientific realist there is a way that the world is, and it is the aim of science to discover it. Cartwright on the other hand is a pluralist. If it is true that the world is just one way, then the Quantum Measurement Problem requires that all true descriptions of reality are renderable as Quantum descriptions. But she argues that we do not need to choose between quantum mechanical descriptions and classical ones. The methodological realist is committed to providing a theory of the relation between quantum and classical states, or at least to believing that such a theory exists. Cartwright sees in this kind of wholesale imperialism and reductionism. She argues that there are both quantum states and classical states, and that there is no contradiction between them. For some scientific ends we invoke one set of properties; at other times, others.

Fellows discusses some aspects of the question as to whether a computer could be endowed with genuine mentality. The computer is a technology which has become embedded in popular culture, to say nothing of its influence in the disciplines of philosophy and psychology. Fellows' discussion is mainly focused on the work of the American philosopher John Searle. Searle is the most influential critic of theorists of artificial intelligence who hold the view that a digital computer could think provided only that it was properly programmed, and of philosophers and psychologists who maintain that the computer provides the best means of understanding ourselves.

There are as well moral dilemmas involved in the construction of thinking machines, but many will think that they lie in the distant future. However, the moral problems thrown up by modern medical technologies are very much with us, and we have to try and solve them within our existing moral frameworks or to evolve a 'new ethic'. Botros provides a sensitive discussion of one dilemma brought about by medical technology. Until recently, persons who sustained massive damage to the cerebral cortex could not have survived the initial trauma which caused it. But given that the brain stem is intact, so that he or she can breath unaided, the patient can be kept alive for years by being artificially fed and hydrated. Such patients are not clinically dead, but their chances of recovery are nil. Ought doctors to sustain the lives of such

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patients, or to withdraw the technology with the result that the patient will die of starvation?

Gyekye is a Ghanian philosopher who has for a long while been interested in African thought. In his paper, he stresses the empirical orientation of African thought as exemplified in agriculture and herbal medicine. One might have supposed that such an outlook would have led naturally to an interest in theoretical science; for instance, Egyptian rules of thumb for measuring the areas of fields led ultimately to Euclid's axiomatisation of plane geometry. However, there is no evidence that this was the case. Gyekye discusses why the explosive coruscation of achievement which is Western science and technology never occurred in Africa.

O'Hear, in his paper, points out that it might appear that modern technology, such as computer-driven graphics and new materials, offers dramatic possibilities for artistic expression. He believes, however, that technological advancement is, on the contrary, affecting art adversely. Suppose we discovered that what we had thought to be an original work of art, say a picture, has been computer-generated: ought we to continue to regard as a work of art? O'Hear thinks not. Part of his argument relies upon a form 'externalism', according to which works of art are constituted not merely by their visible forms, but also by the fact that they have been intentionally produced in a particular way to produce a certain kind of response in their audience.

The concerns of Clark and Grant overlap with those of Cooper. Our technologies are becoming increasingly complex, and Clark suggests that we may be on the brink of an era when no one will really understand the machines which run our lives. Hence the idea that human societies will move ever closer to being rationally controlled by computers and other forms of technology may be an illusory one. It is not just that we could not understand the controlling machines because of their complexity; but rather that the more complex computers became, the more they would be like living things and thus subject to the same evolutionary twists and turns as all living things.

Technology treats the natural world as a means to human ends, and Grant has no quarrel with that. He is worried, however, about Technocracy, that is rule by technicians. Grant is right to be concerned. The results of the new technocratic attitude to human beings and their affairs lie all around us, and are manifested in the rise of the new managerialism with its emphasis on measurement (to say nothing of the odd belief that one has somehow created a different order of things in universities or hospitals by employing a firm of consultants to design a new logo).

Renford Bambrough has now retired as editor of the journal *Philosophy*, and so it is fitting to include a paper by him reflecting upon the practice of philosophy. Bambrough believes that the philosopher ought, wherever possible, to avoid scientific and technical jargon, and to present his or her thoughts in plain language. he diagnoses the tendency of some philosophers to retreat into technocratic jargon as a consequence of the fear of being thought to be 'too literary', and not scientific enough. But perhaps a defence against this tendency would be a realisation that technique is not the same as rigour.

I should like to end this introduction on a personal note. Bradford is primarily a technological university, and it gave me great pleasure to co-organise a conference on philosophy and technology there. Many of the participants commented on how cooperative and relaxed the proceedings at the conference were, and my hope is that it may be possible, in the light of the conference, to get together a group of philosophers and technologists interested in exploring further the impact of technology on society.