

Science and its discontents

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Science and the Retreat from Reason. By John Gillot and Manjit Kumar. *Merlin*: 1995. Pp. 287. £18.95 (hbk); £10.95 (pbk).

Newton's Sleep: Two Cultures and Two Kingdoms. By Raymond Tallis. *St Martin's/Macmillan*: 1995. Pp. 260. \$49.95, £42.50 (hbk); £15.99 (pbk).

Misunderstanding Science? The Public Reconstruction of Science and Technology. Edited by Alan Irwin and Brian Wynne. *Cambridge University Press*: 1996. Pp. 232. £35, \$59.95.

How should we think about scientific knowledge? Although these three books deal with different topics, this question is the common theme running through them. John Gillot and Manjit Kumar are particularly concerned with the idea of progress in science. Raymond Tallis contrasts the two worlds of science and art. Alan Irwin and Brian Wynne present a series of case studies on the public understanding of science. But in each book the question arises how science should be seen in the context of other activities, more especially those studied by way of the humanities and social sciences.

In an extreme form, the question might be posed this way: is scientific knowledge a mountain or part of a plateau? If it can be equated to a mountain, its appearance will change with one's viewpoint; but it will always be a distinctive feature in the intellectual landscape. If science is part of a plateau, although it may occupy a recognizable part of the domain, it will merge seamlessly into surrounding modes of knowing. Tallis sums up the latter image in the following way: "Science has no privileged access to the truth about the natural world: its special authority is socially constructed". In his preface, he explains that his medical training leads him to disagree totally with this assertion, adding: "If science were merely the art of persuasion... then it is impossible to see how science could ever have been effective". This contrasts with Irwin and Wynne's introduction: "In this book, we will draw upon the last two decades of research within the sociology of scientific knowledge which has convincingly demonstrated the *socially negotiated* nature of science" (their emphasis).

To anyone with a passing awareness of the latest trends in the sociology of science, this is a familiar battleground. But the debate contains many ramifications. For example, when William Blake decried "Newton's sleep", he accepted science's separate existence but believed that its adherents were blinkered. This represents a different sort of attack on scientific thinking, most famously carried forward in the 'two cultures' debate 35 years ago (to which Tallis devotes a chapter), but not altogether absent today. Thus queries have been

raised about the symbolism implied by the statue of Newton, based on Blake's vision, that now fronts the new British Library building, just a stone's throw from *Nature's* London office. (Any subtle support for the humanities that the statue may represent has, unfortunately, been drowned by the library's appearance over the past few



years. It has been wrapped like a birthday present awaiting some long-delayed celebration — perhaps a far-from-subtle comment on the position of knowledge of all kinds today.)

Gillott and Kumar explore another aspect of the dichotomy between science and society: the extent to which the concept of progress in science needs to be kept distinct from the same concept applied to society. They argue that the Enlightenment idea of progress included the assumption that humanity could mould nature. This contrasts with the prevailing preference for non-intervention in nature. The changing views of society and its relationship to the world about us have led to a denigration of the idea of scientific progress. This has also manifested itself in a gradual retreat from a belief in reason. The two come together in asserting the primacy of society over science. The authors point out, in passing, that the link was made long ago by Hitler (who certainly thought that the Age of Reason was over): "Science is a social phenomenon, and... is limited by the usefulness or harm it causes".

The scientists seem firm in drawing an ultimate distinction between science and

society. What, then, of the sociologists? "Implicit", say Irwin and Wynne, "in our collection [of essays] is that only a properly sociological approach to contemporary science can give us a real insight into the issues of 'public understanding'." Clearly, the scientists do not find the sociologists' assumptions helpful, and vice versa. Can one progress further?

Two points are obvious. We all see through the particular methodological spectacles that we have learnt to wear. Sociological methods applied to science tend to produce a picture of science that makes it look strangely like sociology. (The same has been true, in reverse, of some past attempts to impose scientific methodology on sociology.) Equally, science is not an entirely social activity. It has, for example, an important cognitive element. From both viewpoints, sociology can be expected to produce only a partial view of science. The question, therefore, is what are the limitations of a sociological dissection of science, and so of the helpfulness of sociological investigations?

It is exasperating that, although the individual authors in Irwin and Wynne's book are aware of this basic problem, they say little about it. For example, it is wryly observed, at one point, that sociologists of science have a tendency to regard 'science' as problematic, but not 'society'. The ethnographic viewpoint that pervades the contributions in this volume might well have been examined usefully in this context. Again, one aspect of cognition is discussed briefly — under the heading "mental models" — but mainly in order to criticize the approach for what it neglects.

There is nothing new in this picture of two intellectual groups ploughing separate furrows. Philosophers of science have been explaining how science works, and scientists have been ignoring them, for many years past. But understanding how the interfaces work between science and its various publics is becoming increasingly important to scientists. This may be one explanation of the scientific backlash against what are seen as the relativistic leanings of some commentaries on science. It will be a pity if this gap between the differing viewpoints cannot be bridged. The case studies in Irwin and Wynne's volume, for example, contain several insights that scientists would find stimulating. It is said that new developments in university teaching are encouraging a 'mix-and-match' philosophy of learning. Maybe that is actually the way for scientists and sociologists to learn from each other in the immediate future. □

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