

Back to reality?

V. Paul Marston

Observation and Objectivity. By Harold I. Brown. Oxford University Press: 1987. Pp. 255. £22.50, \$29.95.

Objective Knowledge. Edited by Paul Helm. Inter-Varsity Press, Norton Street, Nottingham NG7 3HR, UK: 1987. Pp. 192. £10.95.

THEOCHARIS and Psimopoulos's attack on philosophers of science, which appeared in *Nature* of 15 October last year, certainly stimulated general interest in questions of objectivity and scientific truth — but did it rightly reflect recent thinking in these areas?

The logical empiricism which dominated the 1940s–1950s emphasized logic, language and a search for neutrality of observation. Actual science was used to illustrate a supposedly logically constructed system defining objective truth (and denying any other kind). Karl Popper to some extent shared this 'logical' approach, but hinted at the radical criticism that was to come in books by, for example, Hanson (1958), Polyani (1958) and Kuhn (1962). These authors began by looking at actual historical science rather than logical constructions of it, and developed ideas (seen earlier in Whewell and Duhem amongst others) that all observation is 'theory-laden'.

By the late 1960s logical empiricism was dead. But what was to replace it? If all observation is theory-laden, then surely whether science has 'progressed' depends on your point of view, and scientific theories are useful instruments rather than 'truths'? Kuhn himself recoiled from the idea, but Feyerabend developed it and some extremists concluded that science is simply an ideology, with no special claim to truth.

Other philosophers of science, however, such as Hacking, Putnam, Shapere and Suppe, whilst likewise beginning from actual science and accepting that theory is implicit in observation, have sought (in a variety of ways) to develop ideas which preserve and redefine objectivity, scientific realism and scientific 'progress'. Though such realist movements have their critics (for example Laudan and Van Fraassen) they have largely set the agenda of debate since the late 1970s. This makes ironical the plea in Theocharis and Psimopoulos's article that work should be done "putting forth adequate definitions of such fundamental concepts as objectivity, truth, rationality and the scientific method", as it is exactly what such 1980s figures have been attempting.

Professor Brown reflects the general trend. His book *Perception, Theory and Commitment*, published in 1977, con-

tained a long epitaph for logical empiricism followed by a Kuhnian analysis of perception with paradigms and normal and revolutionary science. *Observation and Objectivity* hardly mentions Kuhn, and its index has no entry for 'paradigm'. It advocates the scientific realism of the school of Dudley Shapere, considering the function of scientific theory, the nature of knowledge and scientific observation, and the meaning of objectivity.

Brown's treatment shares some of the weaknesses and incompleteness of Shapere's ideas. Thus the twin ideas of 'domain' and 'theory' (introduced by Shapere in 1969 as "fundamental conceptual tools for illuminating the nature of science") remain obscure. Popper, Kuhn and Lakatos all told us how to recognize a scientific discipline, and why (for example) astrology wasn't one. Shapere's 'domains' remain vague, and Brown's frequent reference to them clarifies little. To say, for example, that "the notion of a domain encapsulates all items that researchers deal with in a particular field" (p.23) and "different norms are appropriate in different domains" (p.32) offers little help in recognizing them.

Brown states that one of his main aims is to argue that the study of how we get knowledge is itself a domain: "epistemological claims have the same status as theoretical claims in science" (p.13). The correct way to obtain knowledge is learned by studying how scientists in fact did it in the past: "epistemology is a second order science" (p.33). The problem here is that in assuming that particular sciences *have* got knowledge, we surely need to know what knowledge is? Why should all our *present* concepts not eventually be classed as mistakes — as 'ether' is now? If so, any present epistemology would have been based on a study of mistakes rather than on genuine instances of knowledge acquisition.

Similar circularity of argument exists in Brown's drawing of parallels between the old idea that perception is 'caused' by something 'out there' and a belief in the reality of scientific non-observables. Surely a question about the 'reality' of any *particular* physical entities is meaningful only if we have a *prior* commitment to the general existence of a world 'out there'? Brown's refutation of 'instrumentalism' is little more than an assertion that it is not in fact what scientists do, and he gives us no reason for confidence that all our present concepts will not eventually be reduced to mere 'instruments for prediction' just as Newtonian mechanics has been (p.15).

If, however, Brown's realism is not yet convincing on such points, this simply indicates need for further discussion. His book does successfully sum up in a readable manner some of his school's 'realist' thinking on the nature of observation and science, and contains some useful case

analyses. I hope that not only the philosophically minded, but many thoughtful scientists whose gut reaction may be 'realist', will want to ponder upon the questions and problems modern scientific thinking poses on these issues.

Objective Knowledge is a compendium of articles from academic practitioners of science, social science, linguistics and divinity, each of whom addresses the question of objectivity in his or her discipline. The contributors take an evangelical Christian standpoint — committed (as mainstream evangelicalism has always been) both to the inspiration of the Bible and to the general reliability of mainstream science. The high religious commitment of so many scientists who built our present world-view should (if for no other reason) make us wish at least to consider this viewpoint seriously.

In a book published recently, one might have wished for more reference to the new realist movements, of which the authors say almost nothing. They do, however, come to grips with the relativism of 'Kuhnism', Polyani (a longstanding fascination of Walter Thorson's) and parallel figures such as Mannheim. They analyse how 'theory-ladenness' relates to the Christian view of a 'real' created world.

The book contains a refreshing breadth of vision in our world of increasing specialization by tackling 'objectivity' across very different disciplines. It well represents the current general thinking of Anglo-American Christians who take this particular position (such as those of the American Scientific Affiliation), and as such is a useful library addition. □

V. Paul Marston is a Senior Lecturer in the Faculty of Science, Lancashire Polytechnic, Corporation Street, Preston PR1 2TQ, UK.

Biology and the Bible

Two recent books on science and theology are *God and Evolution* by R. J. Berry (Hodder, £6.95) and *Biblical Creation and the Theory of Evolution* by D. C. Spanner (Paternoster, £6.95). The authors champion the classic Christian viewpoint that has been increasingly under attack over the past decade by supposed Biblical 'literalists', who argue for a 'young Earth' created in 144 hours.

Berry and Spanner are biologists who see nature and the Bible as 'God-given' and in ultimate harmony, but base their science on observation not on theology. The treatments overlap, but Berry focuses more on the history of the interaction between science and theology, contemporary evidences and 'creationism', while Spanner concentrates on the Biblical meaning of creation and its compatibility with modern science. Both books usefully illustrate how a belief in a Biblical world-view can be consistent with modern empirical biology. V. Paul Marston