THE SELF AND ITS BRAIN

Though it has had an immense influence outside of philosophy, the thought of Karl Popper continues to be neglected and misunderstood by most professional philosophers. Nor do we need to look far for an explanation of the fact that Popper's philosophy has received more serious attention from social theorists, working scientists, historians of art, and practicing politicians, for example, than from the main body of academic philosophers. Popper's conception of the proper approach to philosophy has put him in permanent opposition to the dominant schools of our age, whose view of the subject he has ceaselessly criticized.

Popper has always denied that there is an esoteric method peculiarly appropriate to philosophy, and he has always insisted that philosophical problems grow naturally from difficulties in other areas of inquiry. Against both logical positivism and linguistic philosophy, whose major exponents he knew personally when the seeds of these movements were sown in the Vienna Circle during the interwar years, Popper claims that the problems of philosophy are to do with the world and our knowledge of the world. They are not pseudoproblems, to be dissolved by some method of linguistic or conceptual analysis that shows them to be devoid of significance, but genuine questions to which a diversity of meaningful answers may be proposed. Philosophy is, in fact, simply a critical investigation, at a high level of abstraction, of our commonsense beliefs.

In the theory of knowledge, Popper's distinctive contribution is his suggestion that what distinguishes science from myth, metaphysics, and pseudoscience is the falsifiability of its claims about the world. In sharp contrast to popular conceptions of science derived from the works of Bacon and Descartes, Popper asserts that science has no foundation of certainty either in observation or in the order of our ideas and that no formula can be found that guarantees scientific discovery or the growth of knowledge. According to Popper, science is a creatively conjectural enterprise, in which bold hypotheses (themselves often stumbled upon unawares, or grasped in a flash of intuitive insight) are propagated and then subjected to severe testing by attempted refutation. Similarly, in philosophy we consider questions suggested by our circumstances as reflective creatures who find themselves in a largely unknowable world, and the appropriate procedure is to adopt a critical approach in which rival views are scrutinized as to their adequacy to the demands of the current problem situation.

In *The Self and Its Brain: An Argument for Interactionism* (Berlin, Heidelberg, New York: Springer-Verlag, 1977, 597 pages), Popper has collaborated with his friend, the Nobel Prize-winning neurophysiologist Sir John Eccles, to produce a book of the first importance in which this ap-

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proach to philosophy is well exemplified. In it the ancient problem of the relation of body to mind is treated, not as a result of a linguistic or conceptual confusion, but as a real difficulty in our thought about ourselves. The rival accounts of this relation—the various sorts of materialism and of dualism, for example—are all canvassed as more or less satisfactory responses to this difficulty. At one level, the book may be seen as a sustained polemic against reductionism. According to Popper and Eccles, the conception of man as "nothing but" a physico-chemical mechanism is at once scientifically unsupported, philosophically inadequate, and morally pernicious. Their aim is to reinstate "the ghost in the machine," that troublesome wraith of Cartesian philosophy, which it has been the passionate concern of several generations of materialists to exorcise. At another level, the book may be seen as an application to the mind-body problem of Popper's theory of a three-tiered world, comprising not only material objects and states of mind (which he calls "World 1" and "World 2," respectively) but also a domain of intelligibles, virtual objects or abstract entities (which he calls "World 3").

The book—which is a handsomely produced and remarkably inexpensive volume—has three parts. In the first part, written by Popper, a philosophical refutation of materialism is attempted in an argument of unparalleled erudition and clarity. In the second part, Eccles gives an absorbing account of the neurophysiology of consciousness, proposing the hypothesis that the mind is an independent entity active in causal interactions with the "liaison areas" of the dominant cerebral hemisphere. The third section is based on twelve conversations between the two men, recorded in late September of 1974 at the Villa Serbelloni on Lago di Como, and brings out clearly some important differences in view between them.

Popper's contribution contains many very good things. He contends that nothing can show *a priori* the superiority of the materialist position, and, in a fascinating section on the self-transcendence of materialism in modern science, he shows how at least some versions of materialism belong to a phase of scientific thought now long obsolete. He adduces some important and, in my view, wholly conclusive arguments against the doctrines of parallelism and epiphenomenalism, which deny to mind the causal potency it is thought to possess in ordinary thought and language. He gives us a marvelously fresh account of the history of the mind-body problem, rightly giving special attention to the theories of Descartes, Leibniz, and Spinoza. His contribution also contains what is in many respects the most provocative and constructive section of the book, a chapter on the self in which an evolutionary approach to the phenomenon of selfhood is espoused.

Undoubtedly the most controversial part of Popper's argument against materialism, however, is that which appeals to his theory of a Third World of abstract entities. Popper shares with Plato, the logician Frege, and the influential contemporary American philosopher W. V. Quine, the belief

that a domain of objective structures must be postulated that is independent of the realms of matter and mind and that can interact causally with them. His "World 3" differs in several important respects from Plato's realm of essences, from Frege's third realm of thoughts, and from the domain of classes, or sets, postulated by Quine (who, interestingly, combines the commitment to abstract entities with a rejection of mentalism), but it has in common with these accounts the fundamental commitment to a pluralist view of the world. If I am not mistaken, it is his appeal to the reality of the Third World, which Popper invokes partly in order to account for certain features of evolution by natural selection, that constitutes his crucial argument against the most powerful contemporary variant of materialism, the so-called identity theory. This very influential view proposes the theoretical identity of mental and physical events: as a matter of fact, rather than of logic, the mind is claimed to be identical with the nervous system (or certain aspects thereof). While the identity theory has the advantage over other doctrines of allowing for the causal potency of the mind, argues Popper, it involves a view of the world that neglects the emergence in it of life, mind, and abstract objects. Thus Popper reveals that his argument against this most attractive form of contemporary materialism *presupposes* the truth of the "Three Worlds" doctrine. If we can avoid postulating World Three, there is every reason to suppose we can do without World Two, as well.

Some of the weaknesses of Popper's argument for World Three have been identified by Paul Feyerabend in his masterly review of Popper's *Objective Knowledge* (*Inquiry* 17 [1974]: 475-507). Feyerabend notes correctly that none of Popper's arguments for the autonomy of abstract objects establishes their irreducibility in terms of mental or physical states and processes. Pointing out, as Popper does, that such things as numbers, arguments, and theories exert a causal influence in the mental and physical realms cannot by itself show that such things do not themselves belong to those realms: to show a causal connection is not to mark an ontological distinction. Too often, as Feyerabend remarks, Popper proceeds by excluding certain things from the physical and mental realms and then triumphantly discovers them in World Three. He even elevates this game of hide-and-seek into a methodological principle, stipulating (bizarrely) that we are to resort to Occam's razor only *after* we have decided which entities are irreducible. Where Popper abjures this procedure, his arguments often take him on unfortunate excursions into the philosophy of mathematics.

The present reviewer is even more reluctant than Feyerabend to follow Popper into what has become a forbiddingly technical area of inquiry. Three points may be worth making, however. First, it is far from clear that the advantages of Platonism in mathematics can be purchased by Popper unless he forgoes the Hegelian satisfaction of allowing error and progress into the Third World. Secondly, Wittgenstein's far more adequate and fruitful work in the philosophy of mathematics may remind us of a point

that Popper has neglected and that is of fundamental importance for all areas of philosophy: there is an indispensable place for the notion of the independently real even in a philosophy that adopts a radically constructivist or conventionalist view of mathematical knowledge. One may allow that mathematical theorems and calculations, like moral judgments, may be publicly testable and defeasible without allowing that (in mathematics or in morals) there is knowledge of any realm outside of human practices and conventions. And since acknowledgement of the public character of mathematical notions involves no ontological commitment, it is compatible with a physicalist ontology. Thirdly, and finally, Popper's philosophy contains no resources to resist physicalism, since his only arguments for World Two are arguments that invoke World Three. If, as I have argued, Popper's postulated World Three is unnecessary, he has no reason to move beyond the First World of physical objects and laws.

It is their common commitment to a pluralist theory of what the world contains that motivates Popper and Eccles in their argument for interactionism. Their views diverge in other areas, with Eccles displaying a strong concern to preserve the theoretical possibility of the survival of human personality beyond bodily death, to which Popper is comparatively indifferent and which is in any case uncongenial to his evolutionary mode of thought about man's place in the universe. Popper and Eccles both believe that the currency of a mechanistic view of man has contributed to the modern disrespect for human life and dignity—a belief that may be contested by those who, like the present reviewer, see no logical or empirical connection between materialist positions in the philosophy of mind and contemporary inhumanity. Their most important shared commitment, however, is to a conception of the task of philosophers as self-critical conjectural thought about man's relation to the world—a view that sets them apart from the mainstream of current philosophical opinion. It is because this book exemplifies the virtues of such a conception of philosophy that all philosophers should read it—even though few will find its argument finally persuasive.

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