BOOKS: PHILOSOPHY OF SCIENCE

Unification Not Proved

John Dupré

Consilience. The Unity of Knowledge. EDWARD O. WILSON. New York, Knopf, 1998. x, 335 pp. $26 or C$34.95. ISBN 0-679-45077-7.

It is not uncommon for distinguished scientists in the twilight of their careers to turn their hand to philosophy. Unfortunately, the failures among such endeavors are generally acknowledged to outnumber the successes, and Wilson's contribution to the genre must on the whole be consigned to the majority.

When F. A. Pouchet published in 1867 a large volume modestly entitled *The Universe*, he explained in the introduction that the title was intended merely to indicate that he "had gathered from creation at large, often contrasting the smallest of its productions with the mightiest." I was reminded of this work while reading Wilson's book, much of which struck me as more of a compendium of scientific fact and speculation than any systematically worked out philosophical theme.

Wilson does, however, intend to present a thesis, the thesis that all knowledge is unified. The key concept he exploits, borrowing from the nineteenth-century philosopher William Whewell, is consilience. For Whewell, consilience meant seeking principles with as wide an explanatory reach as possible. Its meaning in Wilson's text is somewhat elusive: Sometimes it seems only to mean that different kinds of phenomena have something to do with one another. Sometimes it marks the insistence that there is a seamless web of cause and effect. Quite often it also seems to mean some strong doctrine of physicalist reductionism, though no such doctrine is ever spelled out in any kind of detail.

At any rate, Wilson's book does not discuss in any serious way the debates about the unity of science that have concerned philosophers of science over the last half-century and more. Rather, in a more Pouchetian manner, he expounds his point of view on a number of areas of science, opinions that are all intended to lend support to the general advocacy of consilience.

Wilson's well-known book *Sociobiology*, published in 1975, presented claims for the genetic determination of a wide variety of behavioral traits of humans as well as other animals, and some of its central ideas get rehearsed here. At the same time, Wilson is greatly concerned to rebut charges of crude genetic determinism, and he devotes a lot of space to discussing the interactions between genes and environment. But in the end, the lesson does not seem quite to have gotten through.

For example, one of the most notorious topics from the 1975 book, currently inspiring a great deal of work under the rubric of sociobiology, is the development of the idea that differences in magnitude of contribution to the reproductive purpose—eggs are larger than sperm, and females of many species gestate sizable offspring—will lead to the evolutionary selection of sexually differentiated behavioral dispositions. Broadly, the idea is that males will pursue the maximum volume of reproductive output, whereas females will aim to produce a smaller quantity of high quality offspring. This will lead males to seek as many mates as possible, while females can be expected to look carefully for a high quality mate with the resources to spend on her offspring. Thus in the present work Wilson remarks that reproductive asymmetries between the sexes "predict patterns of mate choice and courtship, relative degrees of sexual permissiveness, paternity anxiety, treatment of women as resources, and polygyny..." (p. 169), without seeing any need to worry about interactions with culture. But in fact if development is a matter of interaction between genes and environment, it is not clear that any such predictions follow. At a more abstract level, although Wilson points out some of the difficulties with the statistical concept of heritability (for example its sensitivity to context) he has no qualms about accepting the conclusions of geneticists who "have calculated the proportionate contributions of genes across a large array of traits in sensory physiology, brain function, personality, and intelligence" (p. 154).

Having established the relevance of biology to human concerns, Wilson advances his claim for consilience with science in chapters on the social sciences, on the arts, and on ethics and religion. Some of Wilson's views in these areas seem decidedly eccentric. The claim that "Rational calculation is based on surges of competing emotions, whose interplay is resolved by an interaction of hereditary and environmental factors" (p. 205) strikes me as the sort of thing that could only seem plausible to someone in the grip of a theory. And the view that "innovation...is a concrete biological process" illustrates a recurrent tendency to confuse a statement of the causal conditions of a process with the analysis of the process itself.

These are details, but they point to a fundamental difficulty. Wilson wants to convince us that biology is a necessary ingredient of the arts, ethics, and so on. There is a very modest thesis possible here, that humans do have some kind of nature and that this nature has something to do with why we like certain kinds of art and why certain social structures would not suit us. It is important to note, for example, that if we were totally different kinds of organisms, we might not mind being enslaved. But it is absurd to suppose that consilience in Wilson's more aggressive sense of reduction has any relevance here. The problem is that finding something interesting to say, between this implausible extreme and the vague suggestion that biology and ethics have something to do with one another, calls for some sophisticated philosophical work, and Wilson does not do the sort of work necessary.

The chapter on ethics and religion is even more perplexing than I have so far suggested. Wilson sees ethics as involving a fundamental divide between the transcendentalist (Kant, Moore, and Rawls are some rather heterogeneous representatives) and the empiricist (represented by the eighteenth-century moral sense theorists and Wilson), the former but not the latter holding moral values to be independent of contingent facts about human nature. Imaginary representatives of these extreme positions are used to present their arguments, but what actually emerges is a debate almost entirely concerned with the existence of God. Although Wilson may be right that "the mélanges of moral reasoning employed by modern societies are...a mess" (p. 254), he offers nothing likely to ameliorate this situation. The book concludes with a worthy plea for environmental awareness, but since this has little connection with the earlier themes I will not discuss it.

Wilson examines important topics and he writes agreeably, if not always lucidly. But the central thesis of the book is vague, the arguments presented generally difficult to discern, and many of the opinions expressed are quite eccentric. The first printing of this book ran to 56,500 copies, and I was left wondering how people with more rigorously worked out views on such topics might come to command a comparable audience.

The author is at the Philosophy Department, Birkbeck College, University of London, Mallet Street, London WC1E 7HX. Email: j.a.dupre@exeter.ac.uk