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## SCIENCE and PHILOSOPHY

### Imperial Science

**OPINION** By Eugene Goodheart

**E**dward O. Wilson is a world-renowned Harvard biologist and founder of sociobiology. In his long career, he has written about everything from the social lives of ants to the planet's fragile network of organisms, which he calls "biodiversity." In his eloquent memoir, *Naturalist* (1994), Wilson showed himself capable of an intense lyricism that many readers associate more with poets than with scientists. But if his arguments on behalf of biodiversity have earned him plaudits from the environmental and cultural left, his views on human behavior and heredity have stirred controversy. Insisting that culture and behavior are largely products of evolutionary development, he grants genetic inheritance enormous weight. To the social constructionists who inhabit large segments of the academy, such views are not only outlandish, but they also are downright dangerous. They summon the specter of biological racism and eugenics that inhabited the halls of Western science and medicine for a good portion of the last century.

In 1998 Wilson provoked controversy with the publication of *Consilience: The Unity of Knowledge*. In this book, he argued that although the various disciplines of learning at first appear fragmented, they can ultimately be integrated—if one knows how to look at them properly. In short, Wilson made a claim for a unified field theory of knowledge. He pointed out, for example, that ethics require no prior grounding in metaphysics, but rather can be described as an extension of the cooperative behavior that so often occurs between organisms. By this and other illustrations, Wilson's theory presumed biology to be the science that explains all other sciences and disciplines. It made biology emperor.

*Consilience* can be viewed as the latest salvo in a culture war that began in the romantic period, a war between science and poetry that has not yet abated. Wilson's precursors are C. P. Snow and Thomas Huxley. In his Rede lecture, "The Two Cultures" (1959), Snow castigated literary intellectuals for their ignorance of the fundamental laws of science. For his part, Huxley, in "Science and Culture" (1881), championed the cause of science at the expense of studying the ancient classics. Snow's principal literary antagonists were F. R. Leavis and Lionel Trilling. Huxley's major opponent was Matthew Arnold, whose notion of "the best that has been known and thought in the world" remained long on the study of literature and short on scientific inquiry.

How did the antagonism between science and poetry arise? Any explanation must begin with the decline of traditional religious authority in post-Enlightenment Europe. Arnold's formulation in "The Study of Poetry" (1880) is memorable: "There is not a creed which is not shaken, not a received tradition which does not threaten to dissolve. Our religion has materialized in the fact, the supposed fact; it has attached its emotion to the fact, and now the fact is failing it." Arnold thought poetry would take the place of religion, whose doctrines were under assault from rational-scientific investigation. "The future of poetry is immense, because in poetry, where it is worthy of its high destinies, our race, as time goes on, will find an ever surer and surer stay . . . Poetry attaches its emotion to the idea; the idea *is* the fact. The strongest part of our religion today is its unconscious poetry" (emphasis added).

Arnold expresses the romantic claim for the spiritual authority of the poetic imagination that Blake and Wordsworth initiated. The rival contender for authority is the science of Newton and Locke, which Blake disparagingly characterized as "natural religion." For Blake, modern science is not simply a description of things as they are, but a reduction of the world to its material aspect, and therefore a debasement of it. According to Blake, the senses alone cannot provide adequate access to the truths of the world. Only the imagination can realize those truths.

In our time, poetry is a private religion for the few. Even its great modern exponent, T. S. Eliot, chastised those who presumed to conflate poetry with religion. James Joyce knew by the time he wrote *Ulysses* that Stephen Dedalus's high-flying ambition to recreate the conscience of his race was aesthetic hubris. Modern champions of science, however, increasingly emboldened by its triumphs, particularly in biology, have no such qualms about claiming

the ground once occupied by religion. For Wilson, science is the via media to saving the planet from ecological extinction. He shares with Snow the Enlightenment belief that salvation will come from the triumph of the scientific method. He regards the humanities and the social sciences in their present incarnation as largely irrelevant mystifications of their subject matter. “Philosophy, the contemplation of the unknown, is a shrinking dominion,” Wilson writes in *Consilience*. “We have the common goal of turning as much philosophy as possible into science.”

According to Wilson, philosophy has become obsolete in its understanding of mental activity and should yield its claim to wisdom about mind to the cognitive and neuroscientists. From Descartes to Kant, philosophers’ reflections proceed from introspection and draw us away from the actual operations of the brain, which is essentially “a machine assembled not to understand itself, but to survive.”

Why self-understanding and survival are mutually exclusive is not clear by any means. But Wilson goes on to insist that religion, too, must yield its authority to science: “Could Holy Writ be just the first literate attempt to explain the universe and make ourselves significant within it? Perhaps science is a continuation on new and better-tested ground to attain the same end. If so, then in that sense science is religion liberated and writ large.” Perhaps—if religion is considered merely an attempt to understand the causal workings of the material universe. The fact that religion might have anything to do with the pursuit of spiritual fulfillment does not enter Wilson’s imagination.

On Wilson’s view, even literary theory becomes the domain of science. Literary theorists must give way to evolutionary psychologists who have formulated the rules that will explain the emergence of genius and creative achievement. “Human nature,” Wilson writes, is the set of “epigenetic rules, the hereditary regularities of mental development that bias cultural evolution in one direction as opposed to another and thus connect the genes to culture.” At a Brandeis University seminar devoted to the subject of consilience, a participant asked Wilson whether knowledge of the genetic rules that govern art—assuming they exist—would be of value to a creative artist. Wilson answered yes. When someone suggested that knowledge of the rules and their application could just as easily prove *obstacles* to creative originality, Wilson’s reply was telling.

As evidence for a rule-bound view of the creative imagination, he cited the formulas that guide scriptwriting for film and television.

The social sciences predictably receive severe criticism for their failure to root their work in the natural sciences, in particularly in biology. Wilson's model for the unity of science is the hierarchy that exists in the natural sciences, in which disciplines are reducible to one another. He provides this example:

*To make any progress [researchers] must meditate on the networks of cause and effect across adjacent levels of organization—from subatomic particles to atoms, say, or organisms to species—and they must think on the hidden design and forces of the networks of causation. Quantum physics thus blends into chemical physics, which explains atomic bonding and chemical reactions, which form the foundation of molecular biology, which demystifies cell biology.*

Wilson thinks of himself as a friend of all disciplines, despite that their ways must be corrected by science. His fellow sociobiologist Richard Dawkins puts the imperial case for his discipline even more forcefully. In his best-selling book, *The Selfish Gene* (1976), Dawkins asserts, “we no longer have to resort to superstition when faced with the deep problems: Is there meaning to life? What are we for? What is man? After posing the last of these questions, the eminent zoologist G. G. Simpson put it thus: ‘The point I want to make now is that all attempts to answer that question before 1859 [the publication date of Darwin’s *Origin of Species*] are worthless and that we will be better off if we ignore them completely.’”

In the endnote to the paperback edition, Dawkins responds to those who have taken offense at Simpson’s quotation by rubbing it in—without making an argument:

*I agree that, when you first read it, it sounds terribly philistine and gauche and intolerant, a bit like Henry Ford’s ‘History is more or less bunk.’ But, religious answers apart (I am familiar with them; save your stamp), when you are actually challenged to think of pre-Darwinian answers to the questions ‘What is man?’ ‘Is there a meaning to life?’ ‘What are we for?’, can you, as a matter of fact, think of any that are not now worthless except for their (considerable) historic interest? There is such a thing as being just plain wrong, and that is what, before 1859, all answers to those questions were.*

If Dawkins had contented himself with the claim that Darwin had made worthless other answers to the questions, Where do we come from? and, How have we evolved? (empirical questions), he would have offended only creationists. But anyone of the most elementary intellectual sophistication knows that questions about meaning and purpose are of another order—and continue to be the legitimate concern of literature and philosophy. They are not simply reducible to knowledge about our genetic structure.

Could our knowledge of genetic structure affect our understanding of ethical matters such as human meaning and purpose? Perhaps, though the sociobiological argument from the evidence so far, namely that our genes are selfish and determinative of our character and behavior, is controversial even within its own discipline. Biologists Stephen J. Gould and Richard Lewontin oppose the sociobiologists' genetic reductionism because of their failure to give an adequate account of the interaction between biological and cultural factors. Genetic reductionism is also banal when translated into ethical terms, for it amounts to little more than an assertion that people need to learn to control their destructive selfish impulses. Does knowledge of our genetic structure, however complete, make the worthless speculations of Plato, Aristotle, Augustine, Montaigne, and Rousseau? The question doesn't deserve an answer. Dawkins distinguishes his scientism from "religious answers," though of course his own commitment to science has all the features of a faith. Wilson, in effect, admits this when he speaks of science as "religion liberated and writ large." In its overreaching, sociobiology is what Blake would call "a natural religion."

In tracing Wilson's thought back to Snow and Huxley, I need to make the important qualification that Huxley was never guilty of this kind of intellectual hubris. Unlike Wilson, he would not have conflated a question about origins with a question about the value and meaning of human life. In his essay "Evolution and Ethics" (1893), he contrasts "the cosmic process" and "the ethical process." He writes, "since law and morals are restraints upon the struggle for existence between men in society, the ethical process is in opposition to the principle of the cosmic process, and tends to the suppression of the qualities best suited for success in that struggle." Which is not say that a knowledge of the cosmic process is irrelevant to our thinking about ethical matters, but that ethics cannot be reduced to biology. "Evolution and Ethics" was an answer to the social Darwinism of Huxley's contemporary Herbert

Spencer, who believed that evolution contained the desired ethical model for human conduct. It could be an answer as well to our contemporary sociobiologists.

Yet sociobiology is not alone in its imperial ambition for science. In *Guns, Germs, and Steel*, another national bestseller, distinguished scientist Jared Diamond provides what he considers a scientific history of the past thirteen thousand years. In his “history of everything,” he aims for “ultimate explanations.” Whereas Wilson approaches evolution from the point of view of genetics, Diamond approaches his subject from the point of view of geography. What both share is the belief that the complexity of life can be reduced to scientific explanation. Diamond sets himself the task of explaining why certain societies have triumphed at the expense of others. Why, for instance, has Europe surpassed Africa and Asia in technological and industrial progress? According to him, the “ultimate explanation” lies in the relative fertility of land and the availability of animals that can be domesticated. Effective food production frees people for a variety of other activities, for example, crafts. Diamond has done impressive work in addressing the question of why different continents demonstrate such different historical trajectories. Much of his detailed exposition regarding food production, animal domestication, and migration is persuasive. But in his truncated view of history, various factors such as culture, ideology, irrational behavior, luck, and great individuals play a negligible role.

In the final chapter of his book, titled “History As a Science,” he dismisses the work of practicing historians in the crudest terms: “Most historians do not think of themselves as scientists and receive little training in acknowledged sciences and their methodologies.” True enough. But does it follow from that deficiency that their sense of history is “nothing more than a mass of detail” or that “history is just one damn fact after another” or that it “is more or less bunk”? Do these characterizations apply to Thucydides or Tacitus or Gibbon, or, for that matter, to any contemporary practicing academic or nonacademic historian?

Narrative history is hardly a mass of details, or just one damn fact after another. Accomplished historians carefully select their facts on the basis of what can be considered significant and what will contribute to the intelligibility, coherence, and persuasiveness of the story told, and they interpret these facts. Diamond has no appreciation of history as a literary art. If we were to take his characterization of nonscientific history as evidence of the empirical understanding in which he takes pride, we would have reason to

suspect his authority elsewhere. In defending ultimate explanation, he argues that he is dealing with history on a large timescale rather than a smaller one in which proximate causes operate. But scale is not simply a matter of time; it may also be a matter of the moment's magnitude. Napoleon's presence on the scene in postrevolutionary France was of immense significance to subsequent world history—as was Hitler's rise in Germany between the two world wars.

The nonscientific humanist view is that history, like literature, invites a series of interpretations that might share common ground, but may also differ from and be in conflict with one another. And the nonscientific historian—like the nonscientific literary critic—embraces the variety of interpretation as enriching our understanding of the subject. Nonscientific historians make objective claims for their views, but the conflicts among them cannot be scientifically adjudicated. Variety and conflict do not preclude the possibility of objectivity and common ground among interpreters, but they do preclude singular explanation.

Consider, for example, Diamond's attempt to explain why China "lost its huge early lead to Europe," given its "undoubted advantages: a rise of food production nearly as early as in the Fertile Crescent; ecological diversity from North to South China and from the coast to the Tibetan plateau, giving rise to a diverse set of crops, animals and technology." Diamond explains it as "a typical aberration of local politics that could happen anywhere in the world: a power struggle between two factions at the Chinese court (the eunuchs and their opponents)." The eunuchs favored the "sending and captaining of fleets," their opponents, prevailing in the power struggle, "dismantled the shipyards . . . and forbade oceangoing shipping." Politics, not geography, is the decisive factor here, though Diamond does not acknowledge that this troubles his thesis in any way. And although he persuasively shows the geographical conditions that constrain choice, he conflates constraint with inevitability. Scientific explanation, dedicated to the finding of cause and effect, looks for the inevitable patterns of existence; historical understanding, based on belief in human freedom, imagines the possibility of alternative outcomes in the past.

It may be that reductionism has an important role to play within the sciences, though it is a contested view, certainly in its imperial manifestation, as I have indicated in my reference to Gould's and Lewontin's critiques of sociobiology. When, however, reductionism is extended to the humanities and the social sciences, it displays a singular lack of understanding and tact. Reductionism

takes several forms. In the humanities, literary works are often reduced to ideological motives that have to do with gender, class, or race. While it is one thing to acknowledge, interpret, and evaluate these factor's significance in a work of literature, it is quite another to reduce the work to its supposed ideological message. In Shakespeare's *The Tempest*, Prospero may refer to his daughter as "his foot" in a flash of resentment when she begs him not to treat her beloved Ferdinand too harshly, and his treatment of Caliban appears to be that of the colonial oppressor. But an exclusive and obsessive focus on Prospero as a Eurocentric imperial man, Miranda as protofeminist consciousness, and Caliban as the voice of post-colonial oppression displaces focus from the deep affection and concern father and daughter have for each other and from the play's realism about human relationships at the time. What we have instead in various reductionist readings is a kind of retrospective moralizing about the play based on contemporary standards of justice and decency. What suffers in the process is our perception of the literary achievement.

I have alluded to Wilson's adversaries within his own discipline. Sociobiology has another adversary in the radical skepticism of postmodernism, which denies the natural sciences, as it does to other discourses, any claim to objective knowledge, despite the amazing progress sciences have made in, for example, our understanding of the genetic makeup of living creatures. (I place "our" in quotation marks because we delegate scientific understanding and conviction to scientists. Our faith or trust in them—these modern-day Prosperos, if you will—is based in part on the evidence of the technology and medical advances that have come out of science.) One is not required to defend the scientism of Wilson and Diamond to affirm the scientists' claims for the objectivity of their discoveries. It is, of course, true that scientific claims are always provisional and can be superseded by new knowledge. But there are claims that have been consolidated and not superseded, and those claims that have been superseded can be placed on a curve of progress to a better understanding of phenomena. My purpose here, however, is not to defend science—for it needs no defending—but rather to reflect on the opposition between two isms: scientism and radical postmodernism. Both are, in my view, detrimental to the cause of science and of the humanities.

For Wilson, scientism—he calls it the Enlightenment—and postmodern epistemology would appear to be the either/or of theoretical debate in the academy. "Postmodernism is the ultimate polar




antithesis to the Enlightenment. The difference between the two extremes can be explained as follows: Enlightenment thinkers believe we can know everything, and radical postmodernists believe we can know nothing.” One theory aims for the unity of knowledge, the finding of ultimate explanations for everything; the opposing theory aims for a radical skepticism about the possibility of any certain knowledge. What they have in common is that both theories are grand theories—radical postmodernists would bridle at the attribution—with the ambition to account for everything. They are reductionist and therefore interdisciplinary in a bad sense, for they display an insufficient respect for the integrity and autonomy of the disciplines. Both theories are dogmatic and therefore incapable of that mixture of confidence and epistemological modesty that says, “This we can know, this we may yet know, this remains in the realm of mystery, subject to a variety of speculation and interpretation that cannot be resolved to certain knowledge.”

Huxley had his adversary in Arnold, Snow in Leavis and Trilling. In both episodes, the adversaries of the proponents of science as the master discipline were the defenders of literary enterprise as a distinct and separate activity. Huxley does not deny the separate integrity of literature; nor does he conflate ethics and evolution. Even Snow, who complains about the politics of writers and literary intellectuals, and wishes they would serve the interests of a benign science devoted to alleviating human misery, assumes a distinction between literature and science. However, the case of Wilson and his postmodern adversaries is different. Wilson acknowledges the difference between literature and science, but not between the study of science and the study of literature. The project of Wilson and his supporters is to subsume all the disciplines under the aegis of the biological sciences, specifically, genetics. For Wilson, literature as well as literary theory can be understood according to the genetic rules that determine human life.

However, his postmodern adversaries in the humanities, unlike the adversaries of Huxley and Snow, do not defend the literary enterprise against scientific imperialism. They do respond to the hubristic version of Enlightenment belief that everything can be known with an equally hubristic dogmatic skepticism that all knowledge is uncertain. But they do not defend literature, because they extend to literary production the same kind of skepticism that they apply to the sciences—or else they reduce literature to ideology. It is, of course, an irony of radical skepticism that it flaunts its own certainties. The trajectory that I have been describing from

romanticism to the present moment reflects a weakening of advocacy of the cause of the humanities.

In a time like the present when the interdisciplinary is the rage, one should be aware of how it can become a vehicle of reductionism, the impoverishing translation of one field into another. Political theory becomes the scientific study of statistics, history of geography, literature of ideology, religion of a scientific understanding of our origins. Too often, the desire for the interdisciplinary is a symptom of a loss of confidence in the integrity of one's own discipline. Unless it is based on mutual respect among disciplines and a sense of its own limits, interdisciplinary work becomes vacuous.

Scientific theory may not necessarily converge with the arts. It may be that each discipline has its own imperatives, which may or may not cross or converge with another discipline. And in the end, the prospect of disciplines going off in various directions or conflicting with one another, unconstrained by the demand for concisience, may bring greater intellectual rewards than the opposite and illusory prospect so tantalizing to Wilson: the unity of all knowledge. 

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