

BOOK REVIEW

Wilson, Edward O. Consilience: The Unity of Knowledge Alfred A Knopf, Inc (1998), 332 pages with appendices and index. Hard cover, \$26.00.

Review by Mark J. Spalding

Environment and development, also known as sustainable development, is an interdisciplinary study. It presumes a bringing together of natural science, social science and the humanities. For E.O. Wilson, this “bringing together” is called ‘consilience.’ His book strives to argue for broadest consilience. However, in trying to take a look at it from an omnipresent viewpoint, he misses something. His language of science and his defense of science leave one feeling that for consilience to occur, all others must accept the precepts of science, its interpretations and perhaps even its language. With the exception of the arts (or humanities), Wilson is very critical of many of the other fields of study including all of the social sciences, ethics and religion for their unwillingness to accept what the natural sciences offer in the way of resolution of age old problems. Unfortunately, while this lack of acceptance is real, and the solutions offered by science are also real, Wilson does nothing to open the door to dialog and certainly does not want any debate from pseudosciences such as economics. Such a posture will not aid Wilson in winning many converts to consilience.

E.O. Wilson’s eighth book is a challenge. To him all disciplines are inter-related. Wilson is brilliant enough to see it, and to relate it to the reader. However, keeping up with the leaps from one discipline to another and his vast knowledge of history and the development of each may be more than some can follow, or at least find enjoyable. In many ways, this is Wilson’s very personal reaction to many issues, theories and even to individual scientists which he is first to admit in some cases is possibly an unfair reaction.

Wilson’s Consilience is organized into twelve chapters. The first two chapters, “The Ionian Enchantment” and “The Great Branches of Learning” lay out the basic argument for consilience. It is believed there is a unity of the sciences, “the world is orderly and can be explained by a small number of natural laws” (page 4). According to Wilson, this belief “has been tested in acid baths of experiment and logic and enjoyed repeated vindication. It has suffered no decisive defeats” (page 5). Consilience, a ‘jumping together,’ is the key to this unity of the great branches of learning. It is the idea of linking “facts and fact-based theory across disciplines to create a common groundwork for explanation” (page 8). Wilson believes there is nothing fundamental which separates human history from physical history and that there has never been a better time to seek consilience in order to resolve the key issues which humanity must address on a daily basis. Many of these key issues cannot be resolved without resort to the natural sciences, social sciences, and the humanities. Any one alone will fail.

The third chapter provides a history of the first attempts at consilience during “The Enlightenment.” Wilson praises the efforts of eighteenth century thinkers who were on the

right track, but whose efforts could not be sustained at the time. In particular, he singles out Francis Bacon as a model for his suggestion that a “common means of inductive inquiry might optimally serve all the branches of learning” (page 27). While he is critical of western reductionism in science, Wilson is equally willing to discard Chinese holism in science. Up to this point, the book works very well and creates the anticipation of a revitalization of enlightenment optimism and understanding across academic disciplines and an incorporation of this understanding throughout society.

Chapter 4, “The Natural Sciences,” is an unfortunately narrow defense of western European white male scientific development. Unfortunate in that it perpetuates the superiority of this branch of science and denigrates the potential of more holistic notions of inquiry that might have avoided the present need for consilience. From this assumption that western natural sciences are optimal, Wilson continues in Chapter 5, “Ariadne’s Thread,” and Chapter 6, “The Mind,” to explain how scientific reasoning works and how science has begun to explain how the mind works. This sets the stage for the Wilson’s view of the world. He sees the biggest chasm as the separation between scientific and prescientific cultures, not race or religion. The laws of physics are the same in every culture and language, only those indigenous peoples limited to ‘common sense’ cannot reach them. American’s added pragmatism to European positivism and the whole thing was bundled into a common manner of reasoning. This ‘manner’ is much like Ariadne’s thread. Once you get to a point in the maze you can follow the thread back out, but it does not ultimately give you a map of the maze. Because of this, we are left with the ‘greatest challenge today . . . in all of science, [which] is the accurate and complete description of complex systems” (page 85). Unfortunately, the “great majority of scientists, their minds focused narrowly on well-defined phenomena, do not care about complexity theory” (page 88). In discussing these topics, Wilson demonstrates his breadth of knowledge by jumping from indigenous myths, to the chemical properties of the plants they smoke, to Timothy Leary and Carlos Castañeda, to Jesus Christ, and to Emanuel Swedenborg (and that all in one page, 73).

Wilson begins with the most basic linkage in Chapter 7, “From Genes to Culture” in which he suggests there is strong evidence for a positive feedback system in which biology (genetic developments) influence culture and likewise culture influences biology. He calls this ‘gene-culture coevolution.’ Everything has worked together to seek mankind’s two primary goals, personal survival and reproductive success. He then takes this the next step to argue in Chapter 8, “The Fitness of Human Nature,” that genetic rules and the development of the human mind bias the development of human nature. Culture is part of the environment, which influences human development, and culture cannot be cut loose from human genetic rules. Given these, for Wilson, certainties, we can only conclude the rules related to what genes do and how they change over time, as well as the fundamental understandings of the human brain and mind functions, that we must use this information to inform our other areas of study. He, however, recognizes (but fails to resolve) the fundamental problem, the lack of a common language. Social sciences and humanities “have difficulty conceiving the relevance of the natural sciences to social behavior and policy. Natural scientists, whose expertise is diced into narrow compartments with little

connection to human affairs, are indeed ill prepared to engage in the same subjects" (page 126).

Over two thirds of the way into the book, Wilson begins to address his topic of consilience in relation to disciplines not in the field of natural sciences. In Chapters 9, 10 and 11, Wilson suggests how the consilience long practiced to great benefit among the natural sciences should be sought in "The Social Sciences," "The Arts and Their Interpretation," and "Ethics and Religion." With regard to the social sciences, Wilson seems almost hostile. He begins by asking how well they are doing in predictive power as states, "Not very well, considering their track record" (page 181). He admits there is progress in the social sciences, it is just much slower. He suggests that social science, ethics and religion have nothing akin to scientific theory to work from, and little if any consilience internally, much less the tools to seek consilience with the natural sciences. He suggests these disciplines are spending too much effort trying to explain various parts of the human condition which might be more easily resolved by science. Only with the arts does Wilson show some understanding of the language and intent of the discipline (although Yeats and Joyce certainly would not be happy about being labeled as 'British' literary figures), and shifts his focus to suggest how natural science might be helpful at art interpretation. However, he also suggests science might someday reconcile the art's mood swings. However, one wonders if such a reconciliation is desired by the arts.

As Wilson traces the topic of consilience among disciplines, he asserts "Enough! A century of misunderstanding . . . has run its exhausting course . . . It is time to call a truce and forge an alliance. . . the social sciences are intrinsically compatible with the natural sciences. The two great branches of learning will benefit to the extent that their modes of causal explanation are made consistent" (page 188). However, he turns right around in the next sentence and fires a shot to end the short truce by stating that "when pursued descriptively and analytically, social theory is not yet true theory" (page 188). While this may be true from a scientist's viewpoint, it is not a diplomatic first gesture. Fortunately for the social sciences, according to Wilson, the swift advances in the natural sciences are going to remedy the flaws by making the bridges for the social sciences. As evidence, he points to cognitive neuroscience, human behavioral genetics, evolutionary biology, and environmental sciences. If the social sciences would only accept this union they will "gain in predictive power" (page 193).

The final chapter, "To What End?" begins by discussing gene therapy, the potential for 'volitional evolution' (which he much too optimistically dismisses by predicting future generations will be 'genetically conservative') and the colonization of space. Wilson then shifts to the suggestion that environmental protection should be the motivation to reach into all academic disciplines and by choice, or over time by necessity, seek consilience. This is the best part of the book. It is classic E.O. Wilson making an impassioned plea on behalf of the environment that encompasses overpopulation, carrying capacity, depletion of water and fisheries, the risks of aquaculture and climate change, environmental security, the myth of technology as a solution, sustainable development, environmental accounting

and environmental economics, conservation, as well as biodiversity. It is all there in one of the most tightly drawn summaries of the state of the environment one will find.

E. O. Wilson makes a contribution toward consilience between the social sciences, the humanities and the natural sciences. However, it is one designed to appeal to those in the natural sciences and their prejudices, rather than to bring the three groups together. While he treats the arts much better than other non-natural science fields, it seems unlikely that his manner of delivering his message will appeal to those in the social sciences, ethics, religion or the arts. It would have been much better if Wilson had been the editor of a volume in which he wrote the introduction, conclusion and framework for discussion, but the different disciplines were allowed to address how to achieve consilience individually. This said, while he makes a few errors, overall Wilson's attempt to bridge the gap between the branches of learning is extremely exciting.

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