
Brief Communications

Sociobiology: The Old Synthesis

By Aurelio José Figueredo, Ph.D.

Director, Graduate Program in Ethology and Evolutionary Psychology. Dept. of Psychology, University of Arizona

This brief communication has two purposes: (1) to describe a recent teaching experience that might be of instructional interest to other ISHE members, and (2) to describe the products of the intellectual exercise occasioned by that teaching (and learning) experience which might be of possible scholarly and research interest to other ISHE members.

During the Spring 2007 semester, I offered a graduate seminar entitled: Sociobiology: 30 Years Later. I decided to do this not out of nostalgia, but out of a realization that none of my current graduate students had been born yet in 1975. In spite of their training in contemporary evolutionary psychology, none of them had ever read Ed Wilson's original Sociobiology: The New Synthesis, which I personally considered a foundational document in our field. All they knew is how various individuals had represented it afterwards, much of which I considered grossly inaccurate. My other motivation was to check on the accuracy of my personal memory of the work because, frankly, I had not reread it during the intervening 30 years, and psychologists have amply documented that all memories may be seriously reconstructed by subsequent experiences and interpretations.

The syllabus read as follows:

This graduate seminar will be a 30-year retrospective on sociobiology and how the ideas have fared over time. Sociobiology has evolved into what is now called Evolutionary Psychology as well as related specialties in other fields such as Behavioral Ecology and Darwinian Anthropology. The big question is, how different are these descendants from their common ancestor and how have the theories and facts offered by sociobiology in the 1970s held up under the scrutiny of continuing research in the area. We will be rereading the 25th Anniversary Edition of E.O. Wilson's classic text "*Sociobiology: The New Synthesis*" and supplementing it with more recent readings to see how those intellectual contributions have held up over time. We will also be considering how well the field has addressed the criticisms directed at it since its inception. For that reason, we will also be reading "*The Triumph of Sociobiology*" by John Alcock during the first few weeks of the course.

I took the first three weeks of the course to present to them the basic content of Alcock's (2001) *The Triumph of Sociobiology*, while the graduate students prepared their class presentations. Each graduate student class presentation covered one or more chapters of Wilson's (1975) *Sociobiology* and compared and contrasted this material with more recent publications on the same or closely related topics and included a complete list of the updated references used.

Although the Alcock *Triumph* book, and my elaborations upon it, provided a summary of the Sociobiology Wars of the 1970s, the main goal of the seminar was not to rehash the old controversy. Instead, it was to pursue the purely scientific goal of determining to what extent the original ideas had survived into the 21st Century, how they had been retained, modified, or superseded in the field. Our goal was to find out just how much had changed and how much has stayed the same over the

intervening quarter-century, aside from all the inflated rhetoric. Our sole criterion was empirical support and empirical disconfirmation of predictions, rather than verbal argumentation or the speculative imputation of motives, ideological or otherwise.

The graduate students did an impressive amount of work. By the time the semester was done, we had collectively compiled a master bibliography of 29 pages of relevant references. These were all articles that somehow "updated" the information provided by Wilson in 1975, by testing empirically verifiable predictions, presenting new findings relevant to the original evidence, and pursuing either consilient or competing theories. We are now considering writing a *Behavioral and Brain Sciences* style "target article" on our findings to solicit comments on our conclusions from the scientific community. One of my purposes in preparing this Brief Communication is to solicit opinions from ISHE members as to whether you believe that such an endeavor would be something worthwhile. If you have any feedback for our group on the merits or limitations of this idea, please contact me at ajf@u.arizona.edu.

Essentially, what we found was that Wilson's (1975) book held up surprisingly well. Although much progress has been made in the field and its daughter disciplines, the theoretical core of sociobiology theory is essentially intact and functioning. There were some factual corrections to be made as more data have accumulated, and some of the emphasis in our research has changed, but it would be a sorry state of affairs indeed if we had not progressed at all in over 25 years!

Furthermore, I witnessed first-time reactions of a new generation to the old controversy. They were frankly dumbfounded as to why

most of Wilson's assertions were even considered controversial. I had to take them back to the Zeitgeist of the 1970s for them to even understand the nature of the original critiques in the context of the times. In either case, without any prompting from me, they found them all to be completely without merit. Some appeared to be the results of identifiable misunderstandings, but the conclusion of the group was that they were not consistent with a correct interpretation of what Wilson actually wrote. I studiously avoided expressing my own opinion on any of these old battles to try to obtain their independent reactions, at least until the end of the course. I was nonetheless gratified to find that my memories of all this were quite accurate. It was an additional testimony to how well most of Wilson's ideas had held up over time that my students found them quite uncontroversial and initially had no idea what the problem was that the critics had with the theory.

Current mainstream metascience holds that a simple strategy of theory falsification (e.g., Popper, 1963) is insufficient to resolve conflicts between theories. Some of Wilson's positions have been subsequently shown to be inaccurate, but these corrections have not substantially threatened the validity of the theory, nor were they in any way related to the ideologically-based criticisms leveled at the time. For example, Dolphins indeed have higher intelligence than he gave them credit for, due to an almost "Chimpanzee-like" social (and "political") structure of shifting male alliances that was not in evidence in the 1970s. Higher Dolphin intelligence is therefore not anomalous in the light of these new findings and is consistent with evolutionary theory. Neo-Popperian philosophers of science (e.g., Lakatos, 1978) instead emphasize competition among theories rather than "naive falsificationism", based upon maximizing predictive capacity,

or "adding empirical content", while minimizing requisite assumptions, or "employing fewer primitives". All the more recent research that we reviewed in ethology and evolutionary psychology is still based upon the same intellectual foundation of evolutionary theorizing as sociobiology. We found no profound shifts in the basic ways of thinking about the evolution of behavior or the forces underlying social selection, such as kin-selection and reciprocal altruism, as well as a resurgent interest in group selection. Few, if any, new assumptions had to be made to account for a wide variety of subsequent empirical findings in evolutionary science. In fact, a large number of new findings lend further support to the original ideas. Furthermore, although some historians of science (e.g., Kuhn, 1970) have characterized different "research paradigms" as empirically "incommensurable", we had little difficulty in testing old predictions with the new empirical research. What counts as evidence has remained essentially the same, and virtual mountains of such evidence have been accumulated in the intervening quarter-century. Other philosophers of science (e.g., Laudan, 1977) have perceived continuities within evolving and progressing "research traditions", and this is precisely what we found between the old sociobiology and contemporary ethology and evolutionary psychology.

The one major failure of prediction that we found concerned Wilson's prognostications for the future of the evolutionary sciences. In three diagrams representing the past, present, and future of sociobiology and its close relations, he showed the disciplines linking the functional (proximate) and the evolutionary (ultimate) specialties within biology, such as ethology, comparative psychology, and physiological psychology, diminishing in prominence over time. Wilson did not foresee the explosive growth of

ethology, evolutionary psychology, and the neurosciences that has occurred since the late 1970s. However, the failure of this particular prediction has no relevance to the validity of sociobiology theory. If anything, the progress of evolutionary science has been arguably better than anticipated.

In summary, teaching this seminar was a valuable experience for both me and my students. It taught them a bit of important history of science, and it permitted me to see the whole thing again through new eyes. I would strongly recommend offering this kind of seminar as a strategy for teaching sociobiology and related disciplines, including ethology and evolutionary psychology, at the graduate level.

References

- Alcock, J. (2001). *The Triumph of Sociobiology*. New York, NY: Oxford University Press.
- Kuhn, T. S. (1970). *The Structure of Scientific Revolutions*, 2nd Edition. Chicago, IL: University of Chicago.
- Lakatos, I. (1978). *The Methodology of Scientific Research Programs*. Cambridge, UK: Cambridge University.
- Laudan, L. (1977). *Progress and its Problems: Towards a Theory of Scientific Growth*. Berkeley, CA: University of California.
- Popper, K. (1963). *Conjectures and Refutations: The Growth of Scientific Knowledge*, pp. 33-39, 52-55. New York, NY: Harper Torchbooks.
- Wilson, E. O. (2000). *Sociobiology: The New Synthesis, Twenty-Fifth Anniversary Edition*. Cambridge, MA and London, UK: Belknap Press of Harvard University Press.