

Philosophy 523 – Philosophy of Evolutionary Biology – Fall 2010

Elliott Sober

This course will examine a range of philosophical questions concerning the theory of evolution. We'll begin with a quick review of what evolutionary theory is, and a consideration of the debate between evolutionary biology and creationism / intelligent design. Then we'll discuss questions concerning fitness, adaptationism, the units of selection, and systematics. We'll also consider whether there are laws in evolutionary biology and whether biology is "reducible" to physics. Finally, we'll consider the bearing of evolutionary theory on the question of whether there is such a thing as "human nature," the relevance of evolutionary theory to explaining features of human mind, behavior, and culture, and the relevance of evolutionary theory to ethical questions.

Requirements:

Attendance in class and participation in discussion are required and will affect your grade. There will be a midterm exam, two short papers (4-5 double-spaced pages on a topic to be assigned, hardcopy to be submitted in class), and a final in the course. Completion of all assignments is a requirement for passing the course.

Office Hours:

My office hours are W 1:30-3:30, or by appointment, in 5199 Helen C. White Hall.

Books available at University Bookstore:

Elliott Sober, *Philosophy of Biology*, Westview Press, 2nd edition (= PB).
Elliott Sober (ed.), *Conceptual Issues in Evolutionary Biology*, MIT Press, 3rd edition. (= CI).
Charles Darwin, *Origin of Species*, facsimile of the 1st edition, reprinted by Harvard University Press.

Other readings

M. J. S. Hodge, "Natural Selection as a Causal, Empirical, and Probabilistic Theory," in *The Probabilistic Revolution*, L. Kruger, G. Gigerenzer, and M. Morgan (eds.), MIT Press, 1987, vol. 2, pp. 233-70.

Elliott Sober, "Did Darwin write the *Origin* Backwards?" *PNAS* 2009, on my web site.

Elliott Sober, "What's Wrong with Intelligent Design?" *Quarterly Review of Biology* 2007, on my web site.

William Paley, *Natural Theology*, 1802, chapter 1. Available at:

<http://darwin-online.org.uk/content/frameset?itemID=A142&viewtype=text&pageseq=1>

Ellery Eells, "Probability." (from *Probabilistic Causality*, Cambridge University Press, 1991, pp. 399-402); on my web site under Course Materials.

Elliott Sober, "Introduction to Bayesian Epistemology" (= IBE), on my web site under Course Materials.

Jerry Fodor, "Special Sciences," *Synthese*, 1974, 28: 77-115.

Jackson and Pettit, "In Defence of Explanatory Ecumenicism." *Economics and Philosophy*,

1992, 8:1-21.

Richard Lewontin, "The Units of Selection." *Annual Review of Ecology and Systematics*, 1970, 1: 1-18.

Kim Sterelny and Philip Kitcher, "The Return of the Gene." *Journal of Philosophy*, 1988, 85: 339-360.

Elliott Sober, "The Contest between Likelihood and Parsimony." *Systematic Biology*, 2004, 53: 6-16. On my web site.

Daniel Sperber, "An objection to the memetic approach to culture." In: Robert Aunger (ed.) *Darwinizing Culture: The Status of Memetics as a Science*. Oxford University Press, 163-173.

Francisco J. Gil-White, "Common misunderstandings of memes (and genes): the promise and the limits of the genetic analogy to cultural transmission processes." *Behavior and Brain Sciences* 2002.

Schedule of Readings and Assignments

Week	Dates	Topics	Readings
1	9/2	Introduction	PB, ch. 1; Sober "Did D write the <i>Origin</i> backwards?"
2	9/7	Logic and Probability	Eells; Sober, IBE.
2-3	9/9, 9/14	Intelligent Design	Paley; PB, ch. 2; Sober "What's wrong with ID?"
3-4	9/16, 9/21, 9/23	Darwin's <i>Origin</i>	Darwin, <i>Origin</i> , Intro and chs. 3,4,6,13,14; Hodge.
5	9/28	Paper 1 Due	
5	9/28	Fitness	PB, ch. 3; Mills and Beatty, and Sober's "2FF" in CI.
5-7	9/30,10/5, 10/7, 10/12	Units of Selection	Williams and DS Wilson in CI; Lewontin; PB ch. 4; Sterelny and Kitcher.
7-8	10/14, 10/19	Adaptationism	PB ch 5; Gould and Lewontin, Maynard Smith, in CI
8	10/21	Midterm Exam	
9	10/26,10/28	Reductionism	Fodor; Jackson and Pettit; Sober "MRAAR," Kitcher, and Waters in CI
10	11/2	Laws	Beatty, "ECT" and Sober "2 outbreaks" in CI
10	11/4	Population Thinking	Mayr and Sober in CI.
11	11/9	Species	Hull, Baum and Donoghue in CI.
11	11/11	Race	Appiah and Andreasen in CI
12-13	11/16,11/18, 11/23	Systematics and Phylogenetic Inference	PB, ch. 6; Farris and Felsenstein in CI. Felsenstein 1978; Sober "Contest."
12	11/18	Paper 2 Due	
14	11/30, 12/2	Sociobiology and Evolutionary Psychology	PB ch.7; Cosmides and Tooby and Buller in CI.
15	12/7	Evolutionary Ethics	Ruse and EO Wilson in CI; Kitcher in CI.
15	12/9	Cultural Evolution	PB, ch. 7; Fraachia and Lewontin in CI; Sperber; Gil-White.
16	12/14	Review for final	