

Philosophy 523 – Philosophy of Evolutionary Biology – Fall 2013

Elliott Sober

This course will examine a range of philosophical questions concerning the theory of evolution. We'll begin with a careful reading of several chapters from Darwin's *Origin of Species*. We'll then examine the debate between evolutionary biology and creationism / intelligent design. Then we'll discuss questions concerning fitness, adaptationism, units of selection, systematics, and phylogenetic inference. We'll also consider whether there are laws in evolutionary biology and whether biology is "reducible" to physics. Finally, we'll consider the relevance of evolutionary theory to explaining features of human mind, behavior, and culture, and 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 1:15-3:15, or by appointment, in 5199 Helen C. White Hall.

Books available at University Bookstore:

Charles Darwin, *Origin of Species*, facsimile of the 1st edition, reprinted by Harvard University Press.

Elliott Sober, *Philosophy of Biology*, Westview Press, 2nd edition (= PB).

Elliott Sober (ed.), *Conceptual Issues in Evolutionary Biology*, MIT Press, 3rd edition. (= CI).

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, chapters 1-2. Available at:

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

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.

Michael Wade, "Group selection among laboratory populations of *Tribolium*." *Proc. Natl. Acad. Sci. USA*, 1976, 73: 4604-4607.

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

Gillian Brown, Kevin Laland, Monique Borgerhoff Mulder, "Bateman's principles and human sex roles." *Trends in Ecology and Evolution*, 2009, 24: 297-304.

See next page for week-by-week schedule →

Schedule of Readings and Assignments

Week	Dates	Topics	Readings
1	9/3	Introduction	PB, ch. 1; Sober, 1 st two sections of “Did Darwin write the <i>Origin</i> Backwards”
1-3	9/5, 9/10, 9/12, 9/17, 9/19	Darwin’s Origin	Darwin, <i>Origin</i> , Intro and chs. 1,2,3,4,6,13,14. Hodge; Sober, rest of “Did D write the Origin backwards?”
4	9/24	first paper due	
4	9/24, 9/26	Intelligent Design	Paley; PB, ch. 2; Sober “What’s wrong with ID?”, Sober, IBE
5	10/1	Fitness	PB, ch. 3; Mills and Beatty and Sober’s “2FF” in CI.
5-6	10/3,10/8, 10/10	Units of Selection	Williams and DS Wilson in CI; Lewontin; Wade; PB ch. 4.
7	10/15, 10/17	Adaptationism	PB ch 5; Gould and Lewontin, Maynard Smith, in CI
8	10-22	Review for midterm	
8	10/24	midterm exam	
9	10/29,10/31	Reductionism	Fodor; Jackson&Pettit; Sober “MRAAR” in CI
10	11/5	Laws	Beatty “ECT” and Sober “2 outbreaks” in CI
10	11/7	Population Thinking and Species	Mayr and Sober and Hull in CI; PB 6.1-6.2
11-12	11/12,11/14, 11/19	Systematics and Phylogenetic Inference	PB 6.3-6.6; Farris and Felsenstein in CI; Sober “Contest.”
12	11/21	Race	Appiah and Andreasen in CI
13	11/26	second paper due	
13	11/26	Cultural Evolution	Sober and Fracchia&Lewontin in CI
14	12/3,12/5	Sociobiology and Evolutionary Psychology	PB ch.7.1-7.3; Cosmides&Tooby, Buller, and Hrdy in CI; Brown et al.
15	12/10	Evolutionary Ethics	Ruse&Wilson and Kitcher in CI; PB, 7.4
15	12/12	review for final	