

Philosophy 523 – Philosophy of Evolutionary Biology
Fall, 2004

Elliott Sober

This course will examine a range of philosophical questions concerning the theory of evolution. We'll begin with the debate between evolutionism and creationism. 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 two exams, one short paper (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 5173 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, 2nd edition. (= CI).
Philip Appleman, *Darwin*, Norton, 2001(=A).

Other readings (those marked * are available at the Copy Center in 1650 Humanities):

William Paley, *Natural Theology*, Rivington 1805, chapter 1.

(<http://www.hti.umich.edu/cgi/p/pd-modeng/pd-modeng-idx?type=HTML&rgn=DIV1&byte=53054870>).

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

Elliott Sober, "Two Faces of Fitness" (= 2FF), on my web site under Recent Papers.

*John Beatty, "The Evolutionary Contingency Thesis." In G. Wolters and J. Lennox (eds.), *Concepts, Theories, and Rationality in the Biological Sciences*, 1995, 45-81.

*Jerry Fodor, "Special Sciences," *Synthese*, 1974, 28: 77-115. Reprinted in Fodor's *Representations*, MIT Press, 1981.

*Frank Jackson and Philip Pettit, "In Defence of Explanatory Ecumenicism." *Economics and Philosophy*, 1992 8:1-21.

Elliott Sober, "The Multiple Realizability Argument against Reductionism," *Philosophy of*

Science, 1999, 66: 542-64 (= MRAAR); available from JSTOR.

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

*Jon Seger and William Stubblefield, "Optimization and Adaptation," in M. Rose and G. Lauder (eds.), *Adaptation*. Academic Press, 1966, pp. 93-124.

Joe Felsenstein, "Cases in which Parsimony and Compatibility can be Positively Misleading." *Systematic Zoology* 1978, 27: 401-410. available from JSTOR.

Schedule of Readings and Assignments

Week	Dates	Topics	Readings
1	9/2	Introduction	PB, ch. 1; Intro, Mayr, and Bowler in A.
2	9/7,9/9	Intelligent Design	Paley; PB, ch. 2; Sober, IBE; NAS in A.
3	9/14, 9/16	Darwin's <i>Origin</i>	Lamarck, Malthus, Lyell, Wallace in A; <i>Origin</i> chapters in A.
4	9/21	Induction v. Abduction	Sedwick, Owen, Fleming Jenkin, Whewell, Mill, Herschel, Hull in A
4	9/23	Paper Due	
4	9/23	Fitness	PB ch 3; Mills and Beatty" in CI; Sober, "2FF."
5-6	9/28,9/30, 10/5, 10/7	Units of Selection	Darwin, <i>Descent of Man</i> , ch 5; Kropotkin in A. PB ch 4; Williams and DS Wilson in CI; Lewontin.
7-8	10/12,10/14, 10/19	Adaptationism	PB ch 5; Gould and Lewontin, Maynard Smith in CI, Seger and Stubblefield.
8	10/21	Exam 1	
9	10/26,10/28	Reductionism	Fodor; Jackson and Pettit; Sober "MRAAR;" Kitcher and Waters in CI; E.O. Wilson, "Consilience," in A.
10	11/2	Laws	Beatty, "ECT."
10	11/4	Population Thinking	Dewey (in A); Mayr and Sober in CI.
11-12	11/9,11/11, 11/16	Systematics and Phylogenetic Inference	PB, ch. 6; Farris and Felsenstein in CI. Felsenstein 1978.
12	11/18	Exam 2	
13	11/23	Darwin, <i>Descent of Man</i> , and Social Darwinism	Darwin, chapters from <i>Descent of Man</i> in A; Hofstadter and Carnegie in A
14	11/30, 12/2	Sociobiology and Evolutionary Psychology	PB ch 7; Wilson and Gould in A; Pinker and Jones in A.
15	12/7	Evolutionary Ethics	Ruse and EO Wilson and Kitcher in CI; Huxley and Huxley in A.
15	12/9	Cultural Evolution	PB, ch. 7.
16	12/14	Review for final	