PHILOSOPHY OF BIOLOGY

PHILOSOPHY 6000

SPRING 2008

Course Description: This course will address central issues in philosophy of biology and, in particular, will focus on the philosophical issues and implications of evolutionary theory. We will start by considering some fundamental conceptual issues: fitness, units of selection, and adaptationism. Next, we will discuss the notion of developmental constraints, and then arguments for and against evolutionary psychology. In the third part of the course, we will think about traditional topics in the philosophy of science—laws and reductionism—and how they apply to biology. Next, we will move on to systematics and consider the species concept and phylogenetic inference. Finally, we will discuss cultural evolution, altruism, and evolutionary ethics.

Professor: Dr. Fritz Allhoff
3006 Moore Hall; Tuesday 2:00-4:00 and by appointment
fritz.allhoff@wmich.edu, 387-4503 (w)

Seminar: Tuesday 4:00-6:30, Moore 3014

Texts:
Elliott Sober (ed.), *Conceptual Issues in Evolution Biology*, 3rd ed. (Cambridge, MA: MIT Press, 2006)
David L. Hull and Michael Ruse (eds.), *The Philosophy of Biology* (Oxford: Oxford University Press, 1998).
Kim Sterelny and Paul Griffiths, *Sex and Death: An Introduction to Philosophy of Biology* (Chicago: University of Chicago, 1999).
Optional: Elliott Sober, *Philosophy of Biology*, 2nd ed. (Boulder, CO: Westview, 2000).

Grading:

Attendance/participation	20%
Presentations	20%
Annotated research bibliography (April 8)	10%
Research paper (6000-9000 words; April 25)	50%

Attendance/Participation: You are required to attend each seminar and to participate. If you miss a seminar, you may turn in a 1500-word reaction to the assigned readings (half exegetical, half critical) at the beginning of the following seminar to avoid a zero for the previous week. You may do this, at most, two times.

Presentations: This will very much be a student-led seminar with some number of students being responsible for presentations each week. I expect *very good* preparation for these presentations, which we will talk more about. In particular, presentations should *not* simply trace through the text with a bunch of quotations (though these should be there as appropriate), but should rather seek to explicate the project in some integrative manner and to provide substantive questions for discussion. PowerPoint is strongly encouraged.

Annotated research bibliography: Before writing your research paper, you will compile a research bibliography which will support the research for that project. There should be at least ten sources in this bibliography, at least half of which should be from after 2000. For each source, you should provide full bibliographic information as well as a 100-word précis. Comments will be offered on the bibliography as will be useful for developing the research paper. This is due on April 8.

Research paper: Students will incorporate the annotated research bibliography into a research paper, which will be in the 6000-9000 word range. My preference would be for something approximately in the middle of this range as I suspect shorter papers will lack some of the depth of longer ones and that longer ones will lack some of the focus of more intermediate ones. Nevertheless, you have some flexibility on this length. Papers are due on April 25 if you want a grade by the end of the semester; otherwise, we will work out other arrangements. It is quite possible that, for some/many of these papers, I will encourage (optional) rewrites in order to achieve a higher grade, conference potential, or publication potential; we will coordinate further deadlines together.

Statement on Academic Honesty: You are responsible for making yourself aware of and understanding the policies and procedures in the Graduate Catalog (pp. 25-27) that pertain to Academic Honesty. These policies include cheating, fabrication, falsification and forgery, multiple submission, plagiarism, complicity and computer misuse. If there is reason to believe you have been involved in academic dishonesty, you will be referred to the Office of Student Conduct. You will be given the opportunity to review the charge(s). If you believe you are not responsible, you will have the opportunity for a hearing. You should consult with me if you are uncertain about an issue of academic honesty prior to the submission of an assignment or test.

TOPICS AND READING ASSIGNMENTS[1]

1	1/8	Introduction to Philosophy of Biology	Sterelny and Griffiths, Chapters 1-2
2	1/15	Fitness	Susan Mills and John Beatty, "The Propensity Interpretation of Fitness" Elliott Sober, "The Two Faces of Fitness"
3	1/22	Units of Selection	George Williams, excerpts from *Adaptation and Natural Selection* David Sloan Wilson, "Levels of Selection: An Alternative to Individualism in Biology and the Human Sciences" Sterelny and Griffiths, Chapter 8
4	1/29	Adaptationism	Stephen Jay Gould and Richard Lewontin, "The Spandrels of San Marco and the Panglossian Paradigm: A Critique of the Adaptationist Programme" John Maynard Smith, "Optimization Theory in Evolution" Sterelny and Griffiths, Chapter 10
5	2/5	Development	Ron Amundson, "Two Concepts of Constraint: Adaptationism and the Challenge from Developmental Biology" (HR) P.E. Griffiths and R.D. Gray, "Developmental Systems and Evolutionary Explanation" (HR) Sterelny and Griffiths, Chapter 5
6	2/12	Evolutionary Psychology	John Tooby and Leda Cosmides, "Toward Mapping the Evolved Functional Organization of Mind and Brain" David Buller, "Evolutionary Psychology: A Critique" Sterelny and Griffiths, 13.1-13.5

[1] The majority of the readings not from Sterelny and Griffiths (1999) are from Sober (2006). In a few cases, they are from Hull and Ruse (1998), in which case they are designated (HR), or will otherwise be emailed to you, in which case they are designated (E).

7	2/19	Laws in Evolutionary Theory	John Beatty, "The Evolutionary Contingency Thesis" Elliott Sober, "Two Outbreaks of Lawlessness in Recent Philosophy of Biology
8	(2/26)	Reductionism *No Class: 1500-word reaction papers due; 500 words on each of the three essays* (excepting Sterelny and Griffiths).	Philip Kitcher, "1953 and All That: A Tale of Two Sciences" Ken Waters, "Why the Antireductionist Consensus Won't Survive the Case of Classical Mendelian Genetics" Elliott Sober, "The Multiple Realizability Argument against Reductionism" Sterelny and Griffiths, Chapter 7
9	3/4	**Spring Break (no class)**	
10	3/11	Guest Professor, Dr. David Rudge	David Rudge, "Taking the Peppered Moth with a Grain of Salt" (E) Joel Hagen, "Retelling Experiments: H.B.D. Kettlewell's Studies of Industrial Melanism in Peppered Moths" (E)
11	3/18	Species	David Hull, "A Matter of Inidividuality" David Baum and Michael Donoghue, "Choosing among Alternative 'Phylogenetic' Species Concepts" Sterelny and Griffiths, Chapter 9
12	3/25	Phylogenetic Inference	Joseph Felsenstein, "Cases in which Parsimony and Compatibility Methods Will Be Positively Misleading" James Farris, "The Logical Basis of Phylogenetic Analysis"
13	4/1	Cultural Evolution	Joseph Fracchia and Richard Lewontin, "Does Culuture Evolve?" Elliott Sober, "Models of Cultural Evolution" Sterelny and Griffiths, 13.6

14	4/8	Altruism **Research Bibliography Due**	Alexander Rosenberg, "Altruism: Theoretical Contexts" (HR) Elliott Sober, "What Is Evolutionary Altruism?" (HR) David Sloan Wilson, "On the Relationship between Evolutionary and Psychological Definitions of Altruism and Selfishness" (HR)
15	4/15	Evolutionary Ethics	Michael Ruse and Edward Wilson, "Moral Philosophy as Applied Science" Philip Kitcher, "Four Ways of 'Biologicizing' Ethics"
	4/25	**Research Paper Due**	