

Phil*6740 Philosophy of Biology - 2011

Tuesday 7:00- 9:30 p.m. Mack 119

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Description

The philosophy of biology can be broadly construed as engaging in two kinds of investigation. One of these explores foundational issues in contemporary biology. For example, it is assumed by many that the basic unit of evolution is the gene, and that organisms are the developmental expression of a “genetic program”. Philosophers of biology question these sorts of assumptions. Other sorts of foundational issues concern the nature of species, how to identify adaptations, and whether there is progress in evolution. Although these questions appear to fall within the province of biological science, they often turn on epistemic and ontological issues familiar to philosophers. Hence, the philosophy of biology has developed over the past few decades through a healthy exchange between these two disciplines. The second sort of investigation explores the implications of biology for traditional assumptions in philosophy. For example, some argue that philosophers have not paid due consideration to humans as evolved animals, and that this insight carries implications for our understanding of mind and morality.

This course offers an introduction to these issues by focusing on three specific topics. The first topic concerns the evolution of altruism. How does cooperative behaviour evolve if selection favours “selfish” genes, and how does group structure influence evolutionary dynamics? The second topic concerns the evolution of human psychology. Does human cognition and emotion reflect our hunter-gather ancestry? If so, what about the influences of culture and environment? The third topic concerns the nature of species in ecology and conservation. What exactly are species, and should they be the focal objects for conservationists (as opposed, say, to genes, traits, or habitats)? Through these three topics we will explore many of the central issues in the philosophy of biology and in biology itself.

Grading

Students will write three short papers (6-10 pages), one on each topic, cumulatively worth 75% of the final grade. The remaining 25% is based on participation and intellectual contributions during seminar.

Format

Each week students are assigned a number of chapters and a set of questions on those readings. Students will meet in small groups prior to class to discuss the readings, prepare answers and to develop outstanding issues or questions. We will then meet as a class to share our thoughts and insights.

Readings

Eliot Sober and David Wilson (1999) , *Unto Others: The evolution and psychology of unselfish behaviour*. Harvard Press.

Mark Buller (2005), *Adapting Minds: Evolutionary psychology and the persistent quest for human nature*. MIT Press.

James McLaurin and Kim Sterelny (2008), *What is Biodiversity?* University of Chicago Press.

Course Outline

Part 1: The Problem of Altruism.

Sept 20 Reading: ***Unto Others***

Introduction, "Bentham's corpse" (p. 1-14).

Chapter 1, "Altruism as a biological concept" (p.17-54).

Sept 27 Reading: ***Unto Others***

Chapter 2, "A Unified theory of social behavior" (p.56- 100).

Chapter 3, "Adaptation and multi-level selection" (p. 101-131).

Oct 4 Reading: ***Unto Others***

Chapter 4, "Group selection and human behavior" (p. 132-158).

Chapter 5, "Human groups as adaptive units" (p. 159- 196).

Oct 11 Reading: ***Unto Others***

Chapter 6, "Motives as proximate mechanisms" (p. 197-222).

Chapter 8, "Psychological arguments" or Chapter 9 "Philosophical arguments"

Chapter 10, "The evolution of psychological altruism" (p. 296-329).

Part 2: Evolutionary Psychology.

Oct 18 Reading: ***Adapting Minds***

Chapter 1: "Evolution" (p. 1-37).

Chapter 2, "Mind" (p. 49-70).

Chapter 3, "Adaptation" (p. 83 – 112).

Oct 25 Reading: ***Adapting Minds***

Chapter 4, "Modularity" (p. 127-200).

Chapter 5, "Mating" (201-252).

Nov 1 Reading: ***Adapting Minds***

Chapter 6 "Marriage" (259—347) or Chapter 7 "Parenthood" (347-419).

Chapter 8, "Human nature" (419-471).

Part 3: Biodiversity, Species and Conservation.

Nov 8 Reading: ***What is Biodiversity?***

Chapter 1, "Taxonomy red in tooth and claw" (p. 1-26)

Chapter 2, "Species: A modest proposal" (p. 27-41)

Chapter 3, "Disparity and diversity"(p. 42-60).

Nov 15 Reading: ***What is Biodiversity?***

Chapter 4, "Morphological diversity" (p. 61-83).

Chapter 5, "Development and diversity" (84-105).

Nov 22 Reading: ***What is Biodiversity?***

Chapter 6, "Explorations in ecospace" (106-131).

Chapter 7, "Conservation biology: The measurement problem" (p. 132-148).

Nov 29 Reading: ***What is Biodiversity?***

Chapter 8, "Conservation biology: The evaluation problem" (p. 149-171)

Chapter 9, "Concluding remarks" (p. 172-176).