

The Philosophy of Biology

New York University
Fall 2010

Instructor: Laura Franklin-Hall, lrf217@nyu.edu
Class: Tuesday and Thursday 2:00-3:15 (Silver 701)
Office Location: 5 Washington Place, room 407
Office Hours: by appointment

Teaching Assistant: Yu Guo, yu.guo@nyu.edu
Section: Friday 11:00-12:15 (BOBST LL141) & 12:30-1:45 (TISCH LC15)
Office Location: 5 Washington Place, room 611
Office Hours: Friday 2:30 - 3:30 and by appointment

Course Summary

We'll consider a variety of topics at the intersection of biology and philosophy. Questions include: (1) Do the complex adaptations of living things provide evidence of intelligent design? Did they ever *provide* such evidence? (2) How are living things different from non-living things? (What makes you a whole organism rather than simply a collection of cells? Is the entire planet a living thing? (3) How is biology separate from, but connected to, other sciences? (Are there autonomous biological laws? Are there emergent biological properties? Can biology be "reduced to" chemistry or physics?) (4) How contingent is biological evolution? (Is evolution "progressive"? Should we count our lucky stars, or were humans pretty much inevitable?) (5) Can biological evolution explain human behavior? (Are we "programmed" by evolution to do certain things? How important is culture in explaining behavior, and can it too evolve?)

Requirements

- Two exams (10/21 and 12/14). Note that the final exam is on the last day of class, not during exam period.
- Three question-based writing assignments (circa 1500 words each)
- Tie-breaker: section attendance and section participation
- There are no required textbooks. All readings will be posted in PDF form on Blackboard.

Supplementary Books on Reserve at Bobst Library

- *Sex and Death* (1999) Sterelny and Griffiths [a textbook -- recommended background]
- *Philosophy of Biology* (2000) Elliott Sober [a textbook]
- *The Case of the Female Orgasm* (2005) Elizabeth Lloyd (for 9/28)
- *The Selfish Gene* (1976) Richard Dawkins (for 10/12)
- *Darwin's Cathedral* (2002) David Sloan Wilson (for 10/19)

Reading Schedule (subject to revision)

class	date	Topic	Reading
		Evolution and Design	
1	9/7	Introduction to Topics	None
	9/9	No Class	
2	9/14	Evolution by Natural Selection	Darwin, <i>On the Origin of Species</i> (chapters 3

			and 4) Skip "On the intercrossing of individuals" p, 153-157. Carefully read the summary of chapter 4.
3	9/16	Design Arguments and Creationism (I)	Sober, "Creationism," 2.1 - 2.6; Paley, "Natural Theology" (selection), Gould, "The Panda's Thumb"
4	9/21	Design Arguments and Creationism (II)	Sober, "Creationism" 2.7-2.8, Behe, "Irreducible Complexity "
		Adaptation, Perfection, and the Contingency of History	
5	9/23	Adaptationism	Gould and Lewontin, "The Spandrels of San Marcos and the Panglossian Paradigm"
6	9/28	Case Studies: The Female Orgasm and the Disposition to Rape	Lloyd, <i>The Case of the Female Orgasm</i> (selection); Kitcher and Vickers "Pop-sociobiology reborn"
7	10/5	Is evolution progressive?	Rosenberg & McShea "Complexity, directionality, and progress in evolution"
8	10/7	The contingency of evolution	McGhee "Convergent Evolution: A Periodic Table of Life?"; Gould, "Double Trouble"; optional: Clayton and Emery "Canny Corvids and Political Primates"
		The Levels of Selection and Biological Individuality	
9	10/12	The Levels of Selection (I) - the individual approach	TBD
10	10/14	The Levels of Selection (II) - the genic and the group approaches	Dawkins, <i>The Selfish Gene</i> (chapter 1), Wilson, "Levels of Selection: An Alternative to Individualism in Biology and the Human Sciences"
	10/16	The American Museum of Natural History	Saturday at noon
11	10/19	The Levels of Selection (III) - a pluralist dissolution?	Sterelny and Kitcher, "The Return of the Gene"
12	10/21	Case Study: The Transition to Multi-cellularity	Grosberg and Strathmann, "The Evolution of Multicellularity: A Minor Major Transition?"
13	10/26	Case Study: The Society as Organism with Adaptations	Wilson, <i>Darwin's Cathedral</i> , chapter 3
		Explanation, Reduction and Laws	
14	10/28	Are there laws in biology?	Beatty, "The Evolutionary Contingency Thesis"
15	11/2	Making sense of counterfactually supporting generalizations in the special sciences	Strevens, "Physically Contingent Laws and Counterfactual Support"
16	11/4	"Midterm"	Midterm study guide
17	11/9	Anti-Reductionism	Kitcher, "1953 and All That: A Tale of Two Sciences"
18	11/11	Reductionism	Waters, "Why the Anti-Reductionist Consensus Won't Survive the Case of Mendelian Genetics"
19	11/16	The Biophilia of Physical Laws	Davies, <i>The Goldilocks Enigma</i> (selection)
		Natural Kinds in Biology	
20	11/18	Natural Kinds in Biology	Wilson et al. "When Traditional Essentialism Fails" <Guest lecture: Yu Guo>
	11/23	No class – Thanksgiving	
	11/25	No class – Thanksgiving	
21	11/30	Natural Kinds and Biodiversity	Sterelny and McLaurin <i>What is Biodiversity?</i> (selection)

22	12/2	Are Races Natural Kinds?	Kitcher, "Does Race Have a Future?"
		Conclusion	
23	12/7	What is Life?	Lovelock, "The Gaia Hypothesis," Spencer, "The Social Organism"
24	12/9	The Future of Human Life?	Chalmers, "The Singularity: A Philosophical Analysis" (selection)
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