

ANG 6583 section 2G51

Issues in Evolutionary Anthropology

Fall 2017

TIME: Mondays Periods 7– 9 (1:55 – 4:55 PM)

PLACE: TUR 1208H

INSTRUCTOR: David Daegling, TUR B376
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OFFICE HOURS: WF 10:30 – 11:30; Wednesdays 1:30 – 2:30 PM.

COURSE OBJECTIVES:

This seminar examines the role of evolutionary theory in the methods and practice of biological anthropology. Major issues in evolutionary biology are explored through examples from the anthropological literature, and we will also consider the contribution of cognate fields to evolutionary theory. The challenges in applying theoretical concepts to specific research questions and the influence of evolutionary theory on anthropological thought are emphasized.

COURSE REQUIREMENTS:

Attendance and active participation in the seminar are essential for the success of the course. Absence from class and/or failure to participate in discussion of assigned readings will detrimentally influence your course grade. Throughout the semester, you will be asked to discuss issues raised in the assigned readings and offer questions for further discussion. Three papers (5-7 pages each) will be assigned over the course of the semester; topics for these papers will be distributed two weeks in advance. Papers are to be submitted as printed or electronic copies at the beginning of class on the due date. Participation will account for 25% of your course grade; each paper accounts for 25% of your grade. Information on current UF grading policies for assigning grade points can be found at <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

OTHER POLICIES:

Cell phones and pagers must be turned off during class. Late papers are subject to a full letter grade reduction. Incompletes will not be granted for any work submitted beyond the end of term (12/10). Plagiarism in any form is subject to university policy. Students requesting classroom accommodation must first register with the Dean of Students Office (DSO). The DSO will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation. Students experiencing personal problems that are interfering with their academic performance are encouraged to contact the University Counseling Center (301 Peabody Hall, 392-1575), Student Mental Health (Student Health Care Center, 392-1171), or Sexual Assault Recovery Services (Student Health Care Center, 392-1161).

COURSE SCHEDULE:

<i>Week</i>	<i>Topic</i>
1 (8/21)	Fundamentals of Evolution
2 (8/28)	Natural Selection
3 (9/4)	Labor Day: No Class
4 (9/11)	The Adaptationist Paradigm
5 (9/18)	Species Concepts
6 (9/25)	Tempo and Mode in Evolution
7 (10/2)	Systematic Philosophy (1st paper due)
8 (10/9)	Units of Selection Revisited
9 (10/16)	Genes and Phenotypes
10 (10/23)	Approaches to Morphology
11 (10/30)	Macroevolution
12 (11/6)	Heterochrony and Life Histories (2nd paper due)
13 (11/13)	Evolution of Cooperation
14 (11/20)	Evolution and Human Behavior
15 (11/27)	Trends in Evolution
16 (12/4)	Social/Metaphysical Dimensions of Evolutionary Thought (3rd paper due)

Course Readings: George C. Williams (1966) *Adaptation and Natural Selection* is required and is to be read in its entirety by Week 2 (8/28). Douglas Futuyma's *Evolutionary Biology* (Sinauer) is recommended as a supplementary text for students who wish to review core concepts in evolutionary theory, but there will be no formal assignments from this text. Assigned articles are posted in pdf format on the course website (Canvas platform) <https://lss.at.ufl.edu/>

Week 4 Adaptationist Paradigm

Gould SJ and Lewontin RC (1979) The spandrels of San Marco and the Panglossian paradigm: A critique of the adaptationist programme. *Proc Royal Soc Lond B* 205:581-598.

Reeve HK, Sherman PW (1993) Adaptation and the goals of evolutionary research. *Quart Rev Biol* 68:1-32.

Mayr E (1983) How to carry out the adaptationist program? *Am Nat* 121:324-334.

Tattersall I (2002) Adaptation: The unifying myth of biological anthropology. *Teaching Anthropology SACC Notes* 9(1): 9-11.

Week 5

Species Concepts

Simpson GG (1951) The species concept. *Evolution* 5: 285-298.

Sokal RR, Crovello TJ (1970) The biological species concept: a critical evaluation. *Am Nat* 104:127-153.

De Queiroz K (2007) Species concepts and species delimitation. *Syst Biol* 56:879-886.

Groves C (2004) The what, why and how of primate taxonomy. *Int J Primatol* 25:1105-1126.

Week 6

Tempo and Mode in Evolution

Gould SJ, Eldredge N (1977) Punctuated equilibria: The tempo and mode of evolution reconsidered. *Paleobiology* 3: 115-151.

Levinton JS (1983) Stasis in progress: the empirical basis of macroevolution. *Ann Rev Ecol Syst* 14:103-137.

McHenry HM (1994) Tempo and mode in human evolution. *Proc Nat Acad Sci* 91:6780-6786.

Benton MJ, Pearson PN (2001). Speciation in the fossil record. *Trends Ecol Evol* 16:405-411.

Week 7

Systematic Philosophy

Simpson GG (1945) The principles of classification and a classification of mammals. *Bull Am Mus Nat Hist* 85: 1-33.

Sneath PHA, Sokal RR (1962) Numerical taxonomy. *Nature* 193: 855-860.

Hennig W (1965) Phylogenetic systematics. *Ann Rev Entomol* 10: 97-116.

Edwards SV (2009) Is a new and general theory of molecular systematics emerging? *Evolution* 63: 1-19.

Farris JS (1985) The pattern of cladistics. *Cladistics* 1:190-201.

Week 8

The Units of Selection

Lewontin RC (1970) The units of selection. *Annual Review of Ecology and Systematics* 1: 1-18.

Brandon RN (1999) The units of selection revisited: The modules of selection. *Biology and Philosophy* 14:167-180.

Sober E, Wilson DS (1994) A critical review of philosophical work on the units of selection problem. *Philosophy of Science* 61:534-555.

Okasha S (2003) Does the concept of “clade selection” make sense? *Phil Sci* 70: 739-751.

Week 9

Genes and Phenotypes

Waddington CH (1942) Canalization of development and the inheritance of acquired characters. *Nature* 150: 563-565.

King M-C, Wilson AC (1975) Evolution at two levels in humans and chimpanzees. *Science* 188: 107-116.

Ghalambor CK, McKay JK, Carroll SP, Reznick DN (2007) Adaptive versus non-adaptive phenotypic plasticity and the potential for contemporary adaptation in new environments. *Functional Ecology*, 21:394-407.

Hlusko LJ (2004) Integrating the genotype and phenotype in hominid paleontology. *Proc Nat Acad Sci USA* 101: 2653-2657.

Week 10

Approaches to Morphology

Dwyer PD (1984) Functionalism and structuralism: Two programs for evolutionary biologists. *Am Nat* 124: 745-750.

Lauder GV, Huey RB, Monson RK, Jensen RJ (1995) Systematics and the study of organismal form and function. *BioScience*, 45: 696-704.

Radinsky LB (1986) Approaches in evolutionary morphology: A search for patterns. *Ann Rev Ecol Syst* 17:1-14.

Pigliucci M (2003) Phenotypic integration: studying the ecology and evolution of complex phenotypes. *Ecology Letters* 6:265-272.

Week 11 **Macroevolution**

Nee S (2006) Birth-death models in macroevolution. *Ann Rev Ecol Syst* 37:1-17.

Wright S (1982) The shifting balance theory and macroevolution. *Ann Rev Genet* 16:1-19.

Erwin DH (2000) Macroevolution is more than repeated rounds of microevolution. *Evol Dev* 2: 78-84.

Potts R (1996) Variability selection in hominid evolution. *Evol Anthropol* 7:81-96.

Week 12 **Heterochrony and Life Histories**

Kaplan H, Hill KR, Lancaster J, Hurtado AM (2000) A theory of human life history evolution: Diet, intelligence and longevity. *Evol Anthropol* 9:156-185.

Hawkes K, O'Connell JF, Blurton Jones NG, Alvarez H, Charnov EL (1998) Grandmothering, menopause, and the evolution of human life histories. *Proc Nat Acad Sci USA* 95:1336-1339.

Kirkwood TBL, Rose MR (1991) Evolution of senescence: Late survival sacrificed for reproduction. *Phil Trans R Soc Lond B* 332:15-24.

Bribiescas RG (2006) On the evolution, life history and proximate mechanisms of human male reproductive senescence. *Evol Anthropol* 15:132-141.

Week 13 **Evolution of Cooperation**

Clutton-Brock T (2009) Cooperation between non-kin in animal societies. *Nature* 462:51-57.

Boehm C (1997) Impact of the human egalitarian syndrome on Darwinian selection mechanics. *Am Nat* 150: S100-S121.

Boyd R, Gintis H, Bowles S, Richerson PJ (2003) The evolution of altruistic punishment. *Proc Nat Acad Sci* 100:3531-3535.

de Waal FB (2008) Putting the altruism back into altruism: the evolution of empathy. *Ann Rev Psychol* 59:279-300.

Week 14 **Evolution and Human Behavior**

Fuentes A (2015) Integrative anthropology and the human niche: toward a contemporary approach to human evolution. *Am Anthropol*, 117: 302-315.

Durham WH (1992) Applications of evolutionary culture theory. *Ann Rev Anthropol* 21:331-353.

Buss DM (2009) The great struggles of life: Darwin and the emergence of evolutionary psychology. *Am Psych* 64:140-148.

Hrdy SB, Judge DS (1993) Darwin and the puzzle of primogeniture. *Human Nature* 4:1-45.

Week 15 **Trends in Evolution**

Grehan JR, Ainsworth R (1985) Orthogenesis and evolution. *Systematic Zoology* 34: 174-192.

Jablonski D (2005) Mass extinctions and macroevolution. *Paleobiology* 31:192-210.

O'Hara RJ (1992) Telling the tree: narrative representation and the study of evolutionary history. *Biology and Philosophy* 7:135-160.

McShea DW (1994) Mechanisms of large-scale evolutionary trends. *Evolution* 48:1747-1763.

Week 16 **Social and Metaphysical Dimensions of Evolutionary Thought**

Ruse M (1977) Karl Popper's philosophy of biology. *Philosophy of Science* 44:638-661.

Perez Velazquez JL (2009) Finding simplicity in complexity: general principles of biological and nonbiological organization. *J Biol Phys*, 35: 209-221.

Marks J (2009) What is the viewpoint of hemoglobin, and does it matter? *Hist Phil Life Sci* 31:241-262.

Rudolph JL and Stewart J (1998) Evolution and the nature of science: on the historical discord and its implications for education. *J Research in Science Teaching* 35:1069-1089.