ANG 6555 section 3124
ANT 4930 section 3125

Issues in Evolutionary Anthropology **Fall 2020**

TIME: Mondays Periods 3– 5 (9:35 AM – 12:35 PM)

PLACE: Synchronously by Zoom; course is administered via Canvas (https://lss.at.ufl.edu/)

INSTRUCTOR: David Daegling, TUR B376
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OFFICE HOURS: via Zoom: Tuesdays 3:00 – 4:55 PM; Wednesdays 12:40 – 1:55 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 posted two weeks in advance. Papers are to be submitted as electronic copies at the beginning of class on the due date. Participation will account for 40% of your course grade; each paper accounts for 20% of your grade. Written feedback on participation and paper assignments will be provided periodically throughout the semester. Information on current UF policies for assigning grade points can be found at https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx

OTHER POLICIES:

Late papers are subject to a full letter grade reduction. Incompletes will not be granted for any work submitted beyond the end of term (12/9). Plagiarism in any form is subject to university policy.

Classroom accommodation: 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.

Other resources: 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).

Statement on COVID-19 and synchronous course delivery: Our class sessions may be audio-visually recorded for students in the class to refer back and for enrolled students who are unable to attend live. Students who participate with their camera engaged or utilize a profile image are agreeing to have their video or image recorded. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate verbally are agreeing to have their voices recorded. If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live. The chat will not be recorded or shared. As in all courses, unauthorized recording and unauthorized sharing of recorded materials is prohibited.

Course evaluation: Students are expected to provide feedback on the quality of instruction in this course based on 10 criteria. These evaluations are conducted online at https://evaluations.ufl.edu. Students will be advised when evaluations are open toward the end of the semester. Summary results of these assessments are available to students at https://evaluations.ufl.edu/results

COURSE SCHEDULE:

Week	***Topic***
1 (8/31)	Fundamentals of Evolution
2 (9/7)	Labor Day: No Class
3 (9/14)	Units of Selection
4 (9/21)	Species Concepts
5 (9/28)	Systematic Philosophy
6 (10/5)	Tempo and Mode in Evolution (**1st paper due**)
7 (10/12)	The Adaptationist Paradigm
8 (10/19)	Approaches to Morphology
9 (10/26)	Phenotypic Plasticity
10 (11/2)	Macroevolution
11 (11/9)	Directionality in Evolution (**2nd paper due**)
12 (11/16)	Life History Strategies
13 (11/23)	Evolution of Cooperation
14 (11/30)	Memetics and Genetics
15 (12/7)	Metabiological Dimensions of Evolutionary Thought (**3rd paper due**)

Course Readings: George C. Williams (1992) *Natural Selection: Domains, Levels and Challenges* is required and is to be read in its entirety by Week 3 (9/14). Assigned articles are posted in pdf format on the course website (Canvas platform) https://lss.at.ufl.edu/

Week 4 **Species Concepts**

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

De Queiroz K (2005) Ernst Mayr and the modern concept of species. Proc Nat Acad Sci USA 102: 6600-6607.

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

Carstens BC, Pelletier TA, Reid NM, Satler JD (2013) How to fail at species delimitation. Molecular Ecol 22: 4369-4383.

Week 5 **Systematic Philosophy**

Aronson JD (2002) 'Molecules and monkeys': George Gaylord Simpson and the challenge of molecular evolution. Hist Phil Life Sci 24:441-465.

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.

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, Simon CM (1980) A critique of the punctuated equilibria model and implications for the detection of speciation in the fossil record. Systematic Biology, 29: 130-142.

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 **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.

Rose MR, Lauder GV (1996) Post-spandrel adaptationism. Pages 1–8 in M. Rose and G. V. Lauder, eds. Adaptation. Academic Press, San Diego, Calif.

Week 8 **Approaches to Morphology**

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

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

Cheverud JM (1996) Developmental integration and the evolution of pleiotropy. American Zoologist, 36(1), 44-50.

Bastir M (2018) Back to Basics: Morphological Analysis in Paleoanthropology. In Schwartz JH (ed) *Rethinking Human Evolution*, Vienna Series in Theoretical Biology, MIT Press. pp. 205-227.

Week 9 **Phenotypic Plasticity**

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.

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

Week 10 **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.

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

Week 11 **Directionality 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 12 **Life History Strategies**

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 sensescence: 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 **Memetics and Genetics**

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

Blackmore, S. (2001). Evolution and memes: The human brain as a selective imitation device. *Cybernetics & Systems*, *32*(1-2), 225-255.

McNamara, A. (2011). Can we measure memes?. *Frontiers in evolutionary neuroscience*, *3*, 1.

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

Week 15 **Metabiological 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.