

# Conceptual Foundations of Evolution and Behavior

(Psychology / EEB 547)

**Spring, 2015**

Time and Place: Fr (9:05-12:05) Austin Peay 308

Instructor: Gordon M. Burghardt (Austin Peay 310A, 974-3300, [gburghar@utk.edu](mailto:gburghar@utk.edu))

TA when GB out of town: Courtney Stec, [cstec@utk.edu](mailto:cstec@utk.edu)

## **Texts and readings**

**(FAB)** Houck, L. D. & L. C. Drickamer (eds.), 1996. *Foundations of Animal Behavior*, University of Chicago Press.

**(FCE)** Excerpts from *Foundations of Comparative Ethology* (G. M. Burghardt, ed.), 1985, Van Nostrand Reinhold (obtain at Graphic Creations: 1809 Lake Ave)

**(BB)** Readings attached to Blackboard system

**(A/V)** *The Discovery of Animal Behavior* six part video series – recommended; some may be shown in class.

You should complete all readings (including appropriate introductions) prior to the class for which they are assigned. There is no term paper, but there will be short mini-reports both oral and written throughout the term and one in-class exam over some basic concepts and historical material announced in advance. Later readings will be tailored to specific student interests. Attending colloquia by visiting scientists on relevant topics is expected.

The objectives of the class are to explore the historical development of evolutionary theory and the study of comparative behavior and their legacy down to the present.

**Schedule (subject to change)**

<u>DATE</u>	<u>TOPIC</u>	<u>ASSIGNMENT</u>
Jan. 9	Introduction - From Myth to Science	In class surveys/discussion DAB 2, 3
16	Natural theology, behavior, and Lamarck  Natural selection, comparative behavior, anecdotes, and the question of credulity	FCE: Kirby, BB: Lamarck, NatRevNeur, 2 Fear cond.  FAB(1): Darwin FAB(2): Romanes
23	Introducing conditioning and behaviorism  Mental continuity, anthropomorphism, and critical anthropomorphism	DAB 4 (in class) BB: Burghardt, Awareness BB: Clive Wynne & commentaries in CCR  Locate a recent egregious research example in a highly reputable journal and develop/present your own position on these issues.
30	Origins of behavioral ecology by a Darwinian skeptic, pioneering experiments on nature/nurture and instinct  The elegant syntheses of British theorists: Keeping the Lamarckian option open.	FCE: Altum FCE: Spalding (both)  FCE: Spencer (A,B), Morgan (A,D,E), McDougall (A,C) all split among students
Feb. 6	Americans to the rescue I: The roots of modern ethology: comparative analysis and experiment.  Americans to the rescue II: Learning, behaviorism, and the sequential organization of behavior  The promise of organic selection	FCE: Whitman (split)  FAB: Thorndike (3), Watson (4)  BB: Baldwin/Morgan/Bell
13	Sensory mechanisms and communication (Dr. Todd Freeberg)	FAB: papers 30-36 DAB 5 (in class, 30 min)
20	Neuroscience and hormones (Dr. Neil Greenberg)	FAB papers 21-28 DAB 5 (in class, finish)
27	Roots of ethological comparison; Ritualization  Umweltlehre: Perception is important too  Resolving the motivation - behavior - learning conundrum	FCE: Heinroth, Huxley (all split). FAB: Lorenz (37) BB: Lehrman Review  FCE: von Uexküll (split)  FAB: Craig (13)

Mar. 6	Behavioral metrics and endogenous rhythms  The initial ethological synthesis  The critics weigh in: The Schneirla school, the motivational problem, and attempts at accommodation	FCE: Hediger, von Holst  FCE: Lorenz (split),  FAB: Lehrman (5), Hinde (29), Tinbergen (6), Hodos & Campbell (12) (some split)
13	Exam on basic concepts and readings to date	DAB 6 (In class)
20	Spring Break, NO CLASS	
27	The Tinbergen program: Adaptation and function  The operant gambit  Back to description	FAB: Cullen (39), Tinbergen, et al. (40) (both split)  BB: Skinner  FAB: Barlow (7), Slater (8), Altmann (9), Rowell (10)
April 3	Spring Recess	
10	Genetics, learning, and development  The sociobiological paradigm shift – now fading or regrouping?	FAB: papers 14-20  FAB: Hamilton (41), Orians (42), Trivers (43), Maynard Smith (44)
17	New directions I: Comparative methods, evolutionary theory, behavioral ecology, development, epigenetics and plasticity	TBA  Terry Maple visit
24	New directions II: Cognition, neuroscience, modeling, applications (conservation, zoos), animal culture, evolutionary psychology	TBA
May 1	Final Discussion: Whither it all?	8:00-10:00 OR Lunch class TBA?

### SPECIAL SERVICES

If you need course adaptations or accommodations because of a documented disability, please contact the Office of Disability Services at 2227 Dunford Hall (telephone/TTY 865-974-6087; [e-mailods@utk.edu](mailto:emailods@utk.edu)) ASAP. This will ensure that you are properly registered for services.