



EVANTH 260SK

**Cognitive Evolution: Apes,
Kids, and What Makes
Humans Smart and
Successful**

Fall 2014

Dates / contact hours: 300 minutes contact time per week for seven weeks

Academic Credit: 1 course

Areas of Knowledge: NS

Modes of Inquiry: STS

Course format: four lectures/week

Instructor's Information

Brian Hare, associate professor of Evolutionary Anthropology and Center for Cognitive Neuroscience, b.hare@duke.edu

Jingzhi Tan, post-doctoral researcher (to defend Mar 2013), Department of Evolutionary Anthropology, jingzhi.tan@duke.edu

Prerequisite(s), if applicable

N/A

Course Description

This lecture course will survey the various approaches and theories that seek to map out what it is about our cognition that makes us human. Students start by exploring the history of the science of mind and will discover how disparate fields of research have long been exploring the question of human cognitive evolution in a fragmented fashion. They will then see how the integration of all available methods will be necessary to fully understand the evolution of our species cognition. In doing so they will explore recent research investigating 1) the development of cognition in normally and abnormally developing children, 2) the impairments of brain damage patients 3) the cognitive abilities of great apes and other nonhumans 4) the appearance of modern humans and the spread

of cultural artifacts in the paleoanthropological record and 5) the existence of cross-cultural and sex differences in human cognition. By synthesizing the most recent findings from a variety of sources, they will discover precise psychological systems that differ between humans and non-humans, conditions that may have favored their evolution, and the underlying neurobiology that support them. In addition, they will learn how the newest technologies available are beginning to uncover how our genes work together to make the brain that houses our human mind.

Course Goals / Objectives

1. Learn basic principles of biological evolution
2. Learn the major approaches in the field to study the biological basis of human behavior (comparative psychology, primatology, cognitive neuroscience, developmental psychology, archeology, human behavioral ecology, behavioral economics)
3. Learn how to conduct literature research and write a scientific paper

Required Text(s)/Resources

Lectures will be presented using PowerPoint. Most Lecture slides will be posted on Blackboard the week after they were presented in class. We will also use Sakai to post updates, weekly readings, and exam grades.

Recommended Text(s)/Resources

Readings are all available on Sakai – there is no text book. Readings will be labelled for which week and lecture they are assigned.

Additional Materials (optional)

Projector, computer connected to project, speaker

Course Requirements / Key Evidences

Final score = Essay 1 (15%) + Exam 1 (35%) + Essay 2 (10%) + Exam 2 (40%).

[Two Essays]

Both essays should be 4-5 pages double-spaced (12 point Times Roman) and will be graded pass / fail. Both essays are intended to be a fun opportunity for you to challenge yourself to think critically about issues we discuss during the semester. They are pass / fail to take off the pressure that comes with writing essays normally. We are less worried about essays that are grammatically perfect and more interested in seeing you have some fun thinking about something you find fascinating. You will definitely fail if you do not turn in your paper on time, you plagiarize, you

clearly did not make a serious attempt to complete the assignment. Absolutely no excuse will be accepted for late papers, but you are welcome to turn them in early. You will need to turn your Essays in via Sakai.

[Two Exams]

Two exams will be given during regular class times on the assigned days. The second exam will be cumulative and will be given during the last regular class session of the semester. Both exams will consist of multiple-choice & true-false questions. The exams will cover material from lectures, films, and readings. Everything is fair game but use the lectures to guide you through your readings and the films when studying. Be aware you may need to read the course readings multiple times to gain a full appreciation of the material.

Technology Considerations, if applicable

Lectures will be delivered via PowerPoint slides. Students will need regular access to online resources of academic journal articles, and an online teaching platform (e.g. Sakai) for students to access announcements and reading assignments.

Assessment Information / Grading Procedures

See Course Requirements

Diversity and Intercultural Learning (see Principles of DKU Liberal Arts Education)

The seminar will help break cultural barriers since we focus on the biological basis of human cognition that unites all humans while explaining the origins of cultural differences.

Course Policies and Guidelines

In order to do well in this class, you must keep up with the readings and attend all lectures. If you miss class due to illness, etc., it your responsibility to obtain class notes from a fellow student. Any information posted on Sakai is intended to supplement (not replace) your class notes. Please do not hesitate to ask questions or make comments. Be engaged, but respectful. Coming to class late, leaving early, or having extended conversations with your neighbors are not acceptable behavior. Please ensure that your cell phones are turned off prior to class. I maintain the right throughout the semester to excuse any individual from class who is disturbing myself or the other students. In addition, anyone leaving a mess (food wrappers, etc.) in class repeatedly will be penalized. Finally, the current Duke University standard for academic integrity can be found at <http://www.integrity.duke.edu>. You are expected to follow this standard at all times.

Tentative Course Outline or Schedule

I. INTRODUCTORY LECTURES:

- Lecture 1: Human Cognitive Evolution
- Lecture 2: Evolutionary Theory

II. THE HUMAN PUZZLE:

- Lecture 3: The Evolution of Cognitive Theory
- Lecture 4: Constraints & Selection during Human Evolution
- Lecture 5: Humans as Hunter-Gatherers
- Lecture 6: Phylogenetics and behavior of apes

III. HUMAN UNIQUENESS:

- Lecture 7: Comparative neurophysiology of apes
- Lecture 8: Human Cognitive Development
- Lecture 9: Social Intelligence Hypothesis
- Lecture 10: Evolution of Theory of Mind
- Lecture 11: Evolution of Cooperation
- Lecture 14: Evolution of Culture
- Lecture 15: Evolution of Language

IV. MID-TERM EXAM

V. EVOLUTIONARY PROCESSES

- Lecture 16: Domesticated Cognition and Convergent Evolution
- Lecture 17: Comparing Bonobo and Chimpanzee Emotions
- Lecture 18: Behavioral Ecology of Humans
- Lecture 19: Human Evolutionary Psychology and Modularity
- Lecture 20: Cultural Evolution from Africa and Beyond
- Lecture 21: Cultural Evolution and Cognition
- Lecture 22: The Ethics of Animal Research

VI. FINAL EXAM

Bibliography (optional)

Post / course codes
18 February 2014