



Anth 463/563
Primate
Behavior



ANTH 463 / 563 Primate Behavior
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Primates are among the most social of animals. This course uses an evolutionary approach to examine the factors important in the diversity and complexity of primate social behavior. We use behavioral ecology models to examine behaviors that affect the way primates survive, succeed, and reproduce in the wild. We will critically examine these theoretical models developed to explain the patterns of distribution of these behaviors.

We will use the theoretical framework of behavioral ecology to examine theoretical models hypotheses about the evolution of primate social behavior. This offers us a way to test ideas and ask questions such as “how is a behavior adaptive” or “what evolutionary factors have shaped a particular behavior”. During this class, we will fit this framework into the phylogenetic and biogeographic relationships of primates, and compare the behavioral diversity found with prosimians, monkeys, and apes in both Old World and New World species. We will critique the value of such evolutionary theories in understanding non-human primate behavior as a whole, together with some limitations and abuses of such theories.

As an upper-level undergraduate / beginning level graduate class, I expect a considerable level of motivation and independent effort to complete readings. My hope is that classes will be more of the seminar format of discussion and critical examination of the readings and materials, rather than a “chalk-and-talk” summary of facts. As such, you will need to complete readings in order to contribute in class. Since my hope is that you will understand, integrate, and apply the information we will be examining in class. I do not expect memorization of facts, and therefore will not be testing you for this skill. I will, instead, be grading you on your ability to take this evolutionary approach further. I have, therefore, designed a set of term papers that you will work on independently. Each term paper will require the description of a model or set of models, the description of a particular set of primates and then final will be an application of the model to the specific group in primates in a final term paper. As time constraints prohibit presentation of individual projects, you will work with others in your topic area to develop a 30 to 40 minute presentation on your topic for the last two weeks of class. Presentations should be made in PowerPoint and I am happy to help you do this if you are not familiar with this format.

Books:

Required texts (undergraduate students):

KB Strier Primate Behavioral Ecology (2nd edition). Allyn & Bacon (KS)

JR Krebs and NB Davis: An Introduction to Behavioral Ecology. Blackwell. (K&D)

Recommended texts (targeted towards graduate students and motivated undergraduates):

P. Kappeler and C van Schaik Sexual Selection in Primates. Cambridge University Press

U Reichard and C Boesch Monogamy: mating strategies and partnerships in Birds, Humans and other mammals. Cambridge University Press

Grade is based on a term paper, due in three segments, and a presentation during the last week of class:

Week 4: Term paper part I - Summary of primate species or group to be used for term paper (25%).

Week 7: Term paper part II - Summary of theoretical model that will be applied (30%).

Week 10: Presentation of project in groups (15%).

Final exam: Term paper part 3 – term paper incorporation parts I and II (30%).

Extra-credit points will be available for class participation. Points will also be lost for absence from class or lack of involvement.

TOPICS COVERED:

WEEK 1	Class 1: Review of primates and evolutionary theory Class 2: Bonobo behavior	K&D 1 KS Ch 1
WEEK 2	Class 1: Review of evolutionary biology and behavioral ecology. Levels of selection (individual, kin, group), fitness, adaptive peaks (baboon friends) and optimality Reproductive value, value of male versus female offspring, current versus future and the idea of trade-offs. Class 2: Economic models in behavioral ecology - costs versus benefits model of reproductive effort (litter size)	K&D 2,3 KS Ch 4
WEEK 3	Class 1: Currencies of models, optimal trade-off between survival (future reproduction) and current reproduction, marginal value theorem, simple algebraic models (optimal diet). Class 2: Economics of territorial / mate defense. Costs and benefits of group living.	K&D 5,6 KS 5
WEEK 4	Class 1: Scramble and context competition Female dominance. Class 2: video	K&D 7
WEEK 5	Class 1: Food and females – the effect of patch size Class 2: special case of chimpanzees	KS 6
WEEK 6	Class 1: New chimpanzees video Class 2: Female strategies and types of dominance hierarchies (nepotistic and individualistic)	KS 7
WEEK 7	Class 1: Male strategies : ESS models for the evolution of parental care Class 2: Alternative mating systems – a logical argument	KS 8
WEEK 8	Class 1: Growth and development – fragile males? Class 2: Presentations (PowerPoint)	KS 9
WEEK 9	Class 1 and 2: Presentations (PowerPoint)	KS 11
WEEK 10	Class 1 (no class 2 – HBES meetings): Class presentations continued	

We will use the following model types and associated primate groups for the term papers and class projects:

Models and primate applications:

1. Parent offspring conflict and differences in parenting in apes
2. ESS model for Prisoner's Dilemma for cooperative breeding in Callitrichids
3. Reciprocal altruism and cooperation in baboon mating
4. Evolution of female dominance in prosimians
5. Polygamy threshold model monogamous versus not in New World monkeys
6. Sexual swelling as a graded signal in macaques
7. Models for monogamy without paternal investment in gibbons
8. Models for infanticide in langurs