

# Biology of Paternal Care

Anthropology 627-301  
Spring 2008

First meeting: Wed, Jan 16<sup>th</sup>, 2-5PM  
328 University Museum

Should I  
stay or  
should I  
go  
now....?

## INSTRUCTOR

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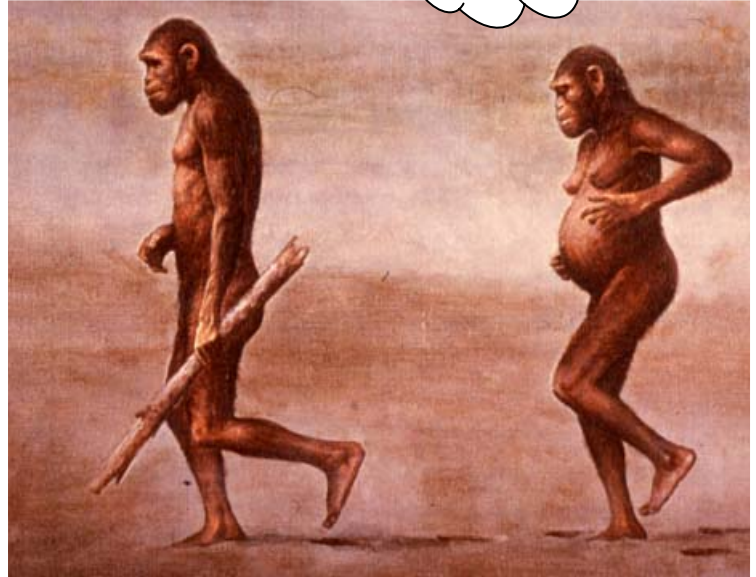
## COURSE DESCRIPTION

Few aspects of the behavior of human and non-human primates are so intriguing, yet so poorly understood, as the prevalence of intense paternal care in some primate species and human societies. Early hominoids probably evolved a social organization that, among other things, changed from involving loose male-female relationships to close dyadic partnerships requiring male provisioning of offspring. Therefore, the development of extensive paternal care and provisioning is considered a fundamental adaptation in the evolution of human life history patterns and in the differentiation of humans from other primates.

Until recently, an understanding of the evolutionary implications of paternal care in primates was limited by the paucity of longitudinal studies involving identified individuals and by practical methodological difficulties for assessing paternity, for studying the physiological mechanisms underlying observed behaviors and demographic outcomes. Recent increases in the number and extent of field studies, coupled with advances in field and laboratory techniques for genetic and hormonal analyses and new theoretical perspectives, provide now a solid ground from which to reexamine paternal care in primates.

We will review both ultimate and proximate explanations for understanding paternal care and its implications for human and non-human primates. Proximate analyses will examine the neural and endocrine substrates of paternal care and the behavioral mechanisms favoring its development and maintenance. Analyses of the possible functions of paternal care in both monogamous and non-monogamous primate species will focus on examination of the genetic structure of social groups, the energetic costs of caring for offspring, and the ecological conditions under which this behavior is more frequently manifested

## TOPICS



Following is a tentative list of the topics to cover during the course. The final list of topics will be determined once I know the number of students in the class, since we have to allocate class meetings for discussing readings as well as for discussing students' proposals. I anticipate that approximately 10-11 sessions will be for discussing the readings and 2-3 to the proposals.

1. How to conduct a review of the literature.
2. Traditional explanations for the evolution of paternal care: "the classics".
3. Emotional bonds, background readings on attachment theory.
4. Male-infant attachment and influence of fathers on child development.
5. Neural and endocrine substrates of paternal care.
6. Genetics of paternal care.
7. The energetics of paternal care.
8. Behavioral mechanisms. Paternal care as mating and parenting effort.
9. Paternal care in non-human primates: demography, ecology and behavior.
10. Paternal care in traditional human societies: demography, ecology and behavior.
11. Paternal care in early humans and apes.

## **REQUIREMENTS AND GRADING**

Grading will be based on participation in discussions and leading of one or two of them (30%), a research proposal (50%) and performance as a discussant of a peer's draft research proposal and participation in discussion of the other proposals (20%).

## **PARTICIPATION AND LEADING DISCUSSIONS**

The course covers a lot of material, thus there are many required readings. This is a graduate level seminar and I expect students do the readings and come prepared to discuss them in class. Your participation in class discussions each week and your leading of one or two of them will constitute 30% of your final grade for this course. It is important that you **CONTRIBUTE** to the seminar, each and every week, in order to get a good grade.

You will contribute to the discussions in two ways. First, during the course of the semester, each student will lead one or two (depends on the number of students in the class) of our discussion sessions. Leading discussion does not mean simply summarizing the readings! Rather, I will expect you to open the class by highlighting the key points of interest and controversy about the topic(s) we are discussing for the day in a brief presentation (15 minutes max). You are welcome (but do not have to) to prepare a brief Powerpoint presentation if it helps you present. Then, it will be your responsibility to direct and moderate the rest of the class in discussing the readings, i.e., choosing the order we discuss them in and the attention paid to each one, raising specific issues or posing questions for us to talk about, etc.

Second, during those weeks when you are not leading the seminar, you must actively **PARTICIPATE** in our discussions, offering your own comments, critiques, and questions. I truly believe that the best way for anyone to really become familiar with any issue or topic is to read about it, ask questions about it, challenge it, argue over it, and so on – that is why class participation is absolutely essential! Thus, I expect each and every student in the seminar to have read and thought about all of the assigned materials before coming to class and for you to demonstrate this. I will also expect you all to be engaged with the seminar leader, with me, and with one another while in class.

## RESEARCH PROPOSAL

You will write a research proposal on a topic related to the Biology of Paternal Care. I must approve the topic early in the semester. You will write a proposal to study a particular research question about the biology of paternal care exactly like you would do if you were truly planning on conducting this research (e.g including a budget and statistics to be used). Some of you may actually decide to do it so that you can actually submit the proposal for funding. In preparing your proposal you will have to follow the format of one of the main funding agencies that usually support this kind of research (L.S.B. Leakey Foundation, NSF, Wenner-Gren, National Geographic). I will discuss with each of you, based on your background and interests, which agency you should consider.

There will be four partial deadlines for the proposal, which are designed to help you organize your work and produce a better final product. You need to submit all materials as hard copies, no email submissions will be accepted. The dates for those deadlines are listed in the Class Schedule. The proposal will be prepared according to the following schedule.

**Proposal Title and Abstract (due February 20<sup>th</sup> in class):** The first deadline is for turning in a tentative title and 300-word abstract of the research proposal.

**Introduction to Proposal (due March 5<sup>th</sup> in class):** You will turn in a brief 3-4 page introduction related to the topic of your proposal that will include background information, questions to be addressed, hypotheses, predictions and relevant bibliography. You will also turn in a revised version of the abstract turned in before.

**Final Draft of Proposal (due April 2<sup>nd</sup> in class):** A "complete as possible" draft version of the proposal will be due in the final weeks of the semester. The specific dates will be determined once we know how many students there are in the class. You are responsible for providing copies to all seminar participants one week before your proposal is scheduled for discussion in class. A "designated discussant" will be assigned to your proposal. The designated discussant's job is to present a brief, concise summary of your proposal and a critical evaluation/review of it (approximately 10-15 minutes). Following the discussant's presentation, you will be allowed to address issues and questions raised by the discussant. Afterwards, the discussion of the proposal is open to all seminar participants.

**Final Proposal (due April 28<sup>th</sup>, in my mailbox):** Each seminar participant must give the authors prompt written feedback on their draft proposals (which can include general editing comments, corrections on spelling, additional references, major and minor critiques of content and figures, etc.). Based on this constructive criticism, a final version of the paper is prepared and 2 copies are turned in. Students will also make copies of their final paper available to each seminar participant.

## READINGS

Each week's reading assignments will focus on a specific topic and will include several general articles that provide an overview of the topic for that week, along with a series of relevant references mainly from the recent primary literature. The list is tentative since I prefer

to make some final additions to the list once I know the demography of the class. For example, how to allocate time to reading about paternal care in non-human primates or humans. Where possible, I will make PDF versions of the assigned readings available.