

## Anthropology 425 (Winter 2016)

### Primate Cognition

Time: Mondays 6 - 8:45pm  
 Instructor: Dr. Hugh Notman  
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Class Location: ICT 121  
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**Readings:** Text: Michael Tomasello & Josep Call 1997. "Primate Cognition". New York: Oxford University Press. [ISBN 0-19-510624-5 pbk.]

In addition to this text, you will be required to read journal articles relevant to the topic or theme being addressed on a given week. These journal articles are a mix of empirical (experimental) papers as well as review/theoretical essays. All (or most) readings will be provided to you via your Blackboard portal, or you can access them using the UofC online journal library.

It should be noted that *this is a heavy reading course that requires weekly readings and class attendance*. You must stay on schedule with the readings and be familiar enough with the material to make informed comments, when appropriate, and/or to ask questions.

### **Aims**

- 1 To promote basic understanding of the data and controversies in the topic areas of primate cognition.
- 2 To review primary research and review articles and discuss them with the class.
- 3 To develop critical evaluation skills as they relate to assessing research papers and the current state of primate cognition research

### **Learning Outcomes**

On successful completion of this course, students should be able to:

- 1 Understand the topic areas in primate (and other animal) cognition.
- 2 Critique primary research articles in the area.
- 3 Evaluate the strengths and weaknesses of particular theoretical views.
- 4 Integrate knowledge from different aspects of research in primate behaviour.

## Group Essay Assignment

This is a large class, and primate cognition covers a very broad area. There are a multitude of topics on which to do a research essay, as well as an overwhelming amount of articles and resources, that can be over-whelming at the undergraduate level. As a result, your essay assignment will take the form of a “review-of-a-review”. This means that you will read, analyze and critique one of three review papers on a particular area of animal cognition written for the journal *Behavioral and Brain Sciences (BBS)*. Review articles for this journal are written by researchers who are associated with long-standing research programs in a particular area relating to human and animal cognition. The articles typically provide a background literature review, an analysis of what the literature thus far has produced in a specific area, and then the author(s)’ own take on the topic based on his or her own research program and the interpretation of their data. In addition, BBS articles invite open commentary from research peers; i.e., other researchers not necessarily connected to the authors, but people who have similar research programs and who can provide intelligent comments and criticisms on the authors’ work. These submissions are appended to each research article, and then responded to by the original authors at the end.

Your task, then, is to choose one of the 3 articles to read and review (provided below). Each article pertains to a research topic that we will cover in class, although we likely will not go into all the detail provided in the BBS article. You will be required to READ the article, and REVIEW the background context that has generated the article (i.e., what are the outstanding questions that need answering? Why is research necessary in this area in the first place? What has been done already to address these questions? What do the authors of the BBS article think of this body of research?). Then, you will need to PRESENT the BBS author(s)’ own research findings and their interpretations of the results. What have they contributed to answering the questions they present in the literature review/introduction? Next, you will READ, REVIEW and SUMMARIZE the open peer commentary at the end of each article (in actual fact, the commentary section constitutes about half of the total article). Many contributors will have similar comments – these can be lumped into “points of view”, or by author/contributor. Finally, you will summarize the BBS author(s)’ responses to their peers’ comments.

In essence, this is a review paper in which the work has already been done for you by someone else (the BBS authors); now you need to “review their review”, as it were. By the end of it, you will have a firm understanding of the ideas surrounding the particular research topic on which the article focuses.

This is a GROUP ASSIGNMENT. At the beginning of the course, students will be assigned to small groups (depending on class numbers), of up to 4 classmates. How you divide up the tasks for completing the assignment is up to you; however, know that ALL GROUP MEMBERS WILL RECEIVE THE SAME MARK, regardless of how much work you think you put in relative to your other group-mates. This means that you need to organize your workload in such a way that is equitable, and that best suits the abilities of each person. You will also have to establish a way of keeping on top of your group-mates and avoid freeloading because in addition to your essay, each group will be required to submit a “group assignment log”, signed by each group member, that outlines (in a single page) the role that each group

**member played in the assignment.** Your essay submission should be 9 – 12 pages long (double-spaced). You will have time in some term classes (see schedule) to work on your assignments, and to discuss with me. **TAKE ADVANTAGE OF THESE CLASS TIMES TO WORK TOGETHER AND ASK ME QUESTIONS!**

Group Essay Articles: Each group must choose ONE of the following articles.

1. Michael Tomasello, Malinda Carpenter, Josep Call, Tanya Behne, and Henrike Moll  
Understanding and sharing intentions: The origins of cultural cognition. *BEHAVIORAL AND BRAIN SCIENCES* (2005) 28, 675–735.
2. Shanker, S. G. and King, B.J. The emergence of a new paradigm in ape language research. *BEHAVIORAL AND BRAIN SCIENCES* (2002) 25, 605–656.
3. Rendell, L. and Whitehead, H. Culture in whales and dolphins. *BEHAVIORAL AND BRAIN SCIENCES* (2001) 24, 309–382. (NOTE: although this paper focuses on cetaceans, the issues regarding animal culture are relevant across taxa, including primates. Many of the peer comments are made by cognitive primatologists.)

## Evaluation

You will also be evaluated on a midterm exam and a final exam. The final will **not** be cumulative.

Group research paper (due March 16)	35%
Midterm exam(Monday Feb. 9)	30%
Final Exam (registrar scheduled)	35%

## Classroom Expectations/Regulations

- Try to arrive on time to prevent disruption to the class. If you are late please take a seat at the back of the room to minimize disruption. Likewise please stay seated until class is concluded. We will not run overtime.
- **Do not converse with classmates during lectures.** This is unfair to students sitting nearby who may miss lecture material that will subsequently appear on exams. If you are discussing lecture material please raise your hand to share the comment or question as that will benefit the whole class. Relevant interruptions are welcome. You may also email questions which will be answered in the next lecture.
- All email enquiries about term tests or exams will be answered in class.
- **Use of laptops in class is NOT permitted unless you have express permission from SAS. It has proven to be too disruptive during class as many people end up surfing the net.**
- **Please turn off cell phones during class.**

Missed tests or presentations automatically receive a score of zero. In the event of an emergency or illness, the Anthropology office (220-6516) or the instructor **MUST** be notified **BEFORE** the exam, and

documentation **MUST** be provided before a make-up test will be scheduled. Performance on make up exams is typically lower than those taken with the class.

**The midterm is NOT returned to students.** I will go over the test IN CLASS the week after the test, by which time marks will be available on Blackboard. If you would like to consult your test, you may come to our posted office hours, or make an appointment. If, after consulting the key, your notes, and the text you have concerns about the marking of your exam, you will be asked to provide a detailed written statement of your concern. Your exam will then be re-graded in its entirety, and marks will be raised, lowered or left unchanged as is warranted. Deadline for the submission of written statement is one week after results of an examination have been posted.

*No special arrangements will be made following a poor test performance.* For example, we cannot change the weighting of the tests, allow retakes, or accept alternate assignments in lieu of the test. Prepare in advance to ensure a good test performance – this is your opportunity to perform well, not later. After the test no changes will be made.

**Final course grades** will be calculated as follows:

A+	100 - 94.9%
A	94.8 - 89.9%
A-	89.8 - 84.9%
B+	84.8 – 79.9%
B	79.8 - 74.9%
B-	74.8 – 70.9%
C+	70.8– 66.9%
C	66.8 – 62.9%
C-	62.8 – 58.9%
D+	58.8 – 54.9%
D	54.8 – 49.9%
F	49.8% and below

### **Writing Across the Curriculum**

Writing skills are not exclusive to English courses and, in fact, should cross all disciplines. The University supports the belief that throughout their University careers, students should be taught how to write well so that when they graduate their writing abilities will be far above the minimal standards required at entrance. Consistent with this belief, students are expected to do a substantial amount of writing in their University courses and, where appropriate, instructors can and may use writing and the grading thereof as a factor in the evaluation of student work. The services provided by the Writing Centre in the Effective Writing Office can be utilized by all undergraduate and graduate students who feel they require further assistance.

### **Student Accessibility Services Accommodations**

Student Accommodations. Students needing an Accommodation because of a Disability or medical condition should contact Student Accessibility Services in accordance with the Procedure for Accommodations for Students with Disabilities available at [http://www.ucalgary.ca/policies/files/policies/procedure-foraccommodations-for-students-with-disabilities\\_0.pdf](http://www.ucalgary.ca/policies/files/policies/procedure-foraccommodations-for-students-with-disabilities_0.pdf).

It is the responsibility of the student to request academic accommodations. If you are a student with a documented disability who may require academic accommodation and have not registered with Student Accessibility Services, please contact their office at (403)220-8237.

Students who have not registered with Student Accessibility Services are not eligible for formal academic accommodation. Students are also required to discuss their needs with the instructor no later than fourteen (14) days after the start of the course.

### **Academic Misconduct**

Academic dishonesty is an unacceptable activity at the University of Calgary and students are strongly advised to read the Student Misconduct section of the University Calendar. Quite often, students are unaware of what constitutes academic dishonesty or plagiarism. The most common are:

- 1) Presenting another student's work as your own
- 2) Presenting an author's work or ideas as you own without proper referencing
- 3) Using work completed for another course

This activity will not be tolerated and students conducting themselves in this manner will be dealt with according to the procedures outlined in the University Calendar.

For detailed information on what constitutes academic misconduct, please refer to the following link: <http://www.ucalgary.ca/pubs/calendar/current/k-2-1.html>

### **Emergency Evacuation Assembly Points**

In the event of an emergency that requires evacuation, please refer to the following link to become familiar with the assembly points for the class: <http://www.ucalgary.ca/emergencyplan/assemblypoints>

### **USRI**

At the University of Calgary, feedback provided by students through the Universal Student Ratings of Instruction (USRI) survey provides valuable information to help with evaluating instruction, enhancing learning and teaching, and selecting courses. Your responses make a difference, please participate!

Website: <http://www.ucalgary.ca/usri/>

### **Freedom of Information and Protection of Privacy Act**

The University of Calgary is committed to protecting the privacy of individuals who work and study at the University or who otherwise interact with the University in accordance with the standards set out in the Freedom of Information and Protection of Privacy Act.

Please refer to the following link for detailed information:

<http://www.ucalgary.ca/secretariat/system/files/foip%20overview.pdf>

The Department of Anthropology and Archaeology's FOIP (Freedom of Information and Privacy) policy requires all reports/examinations to be returned to students during class time or the instructor's office hours. Any term work not picked up will be placed in the Anthropology and Archaeology Office (ES620) for distribution. Any student not wishing to have their work placed in the office must make alternate arrangements with the course instructor early in the term.

### **Safewalk Information**

Campus Security, in partnership with the Students' Union, provides the Safewalk service, 24 hours a day to any location on Campus including the LRT, parking lots, bus zones and University residences. Contact Campus Security at (403) 220-5333 or use a help phone, and Safewalkers or a Campus Security Officer will accompany you to your campus destination.

### **Faculty of Arts Program Advising and Student Information Resources**

- Have a question, but not sure where to start? The new Faculty of Arts Program Information Centre (PIC) is your information resource for everything in Arts! Drop in at SS110, call us at 403-220-3580 or email us at [artsads@ucalgary.ca](mailto:artsads@ucalgary.ca). You can also visit the Faculty of Arts website at <http://arts.ucalgary.ca/undergraduate> which has detailed information on common academic concerns.
- For program planning and advice, contact the Student Success Centre (formerly the Undergraduate programs Office) at (403) 220-5881 or visit them in their new space on the 3rd Floor of the Taylor Family Digital Library.
- For registration (add/drop/swap), paying fees and assistance with your Student Centre, contact Enrolment Services at (403) 210-ROCK [7625] or visit them at the MacKimmie Library Block.  
Contact for Students Union Representatives for the Faculty of Arts:  
[arts1@su.ucalgary.ca](mailto:arts1@su.ucalgary.ca)  
[arts2@su.ucalgary.ca](mailto:arts2@su.ucalgary.ca)  
[arts3@su.ucalgary.ca](mailto:arts3@su.ucalgary.ca)  
[arts4@su.ucalgary.ca](mailto:arts4@su.ucalgary.ca)

Tentative Lecture Schedule      **Anthropology 425: Primate Cognition**    Winter 2016

All (or most) of these readings will be available to you on your D2L portal. Where they are not, it is your responsibility to obtain them from the library (online journals). Be sure you have done the readings for each class.

January 11      **Lecture – Course Introduction**

**A history of the study of animal cognition**

TEXT: Tomasello & Call 1997. "Introduction" pp. 3-23.

January 18 **What are big brains good for? Costs, benefits and the (non)necessity of big brains for complex behaviour**

1. Isler, K & van Schaik, Carel (2009). The Expensive Brain: A framework for explaining evolutionary changes in brain size. *Journal of Human Evolution* (57), pp. 392-400.
2. Akst, J (2013). Send in the Bots: Animal robots have become a unique tool for studying the behavior of their flesh-and-blood counterparts. *The Scientist* (October). Vol. 27. (10). <http://www.the-scientist.com/?articles.view/articleNo/37635/title/Send-in-the-Bots/Video> – Ape Genius

January 25 **The Primate Brain. Where did it come from, and what's so special about? Ecological and Social Origins (Part 1: Ecological factors)**

1. Milton, K. (1981). Distribution patterns of tropical plant foods as an evolutionary stimulus to primate mental development. *American Anthropologist*, 83, 534-548.
2. King, B. (1986). Extractive foraging and the evolution of primate intelligence. *Human Evolution*, 1, 361-372.
3. Lucas et al. (2007). Perspectives on primate color vision. Pp. 805-819.
4. Jacobs & Nathans (2009). Color Vision: How Our Eyes Reflect Primate Evolution. *Scientific American*.

Assignment of essay assignment groups

Feb. 1      **The Primate Brain. Where did it come from, and what's so special about? Ecological and Social Origins (Part 2: Social factors)**

1. Text: Tomasello & Call (1997). Chapter 8, Social strategies and communication. Pages 231-243 (up to chapter 8.2).
2. Dunbar, RIM. (1998). The Social Brain hypothesis. *Evolutionary Anthropology* Pp. 178-190.
3. Barrett, L., Henzi, P., & Rendall, D. (2007). Social brains, simple minds: does social complexity really require cognitive complexity?. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 362(1480), 561-575.

**WORK ON GROUP ESSAY ASSIGNMENTS**

Feb. 8      **MIDTERM**

February 15      Alberta Family Day – NO CLASS

Feb. 22            **What primates Know About the Physical World:**

1. Text: Tomasello & Call (1997). Chapter 2 (Space and Objects) pgs. 25-56, Chapter 3 (Tools and Causality) pp. 57-99, Chapter 5 (Quantities) pp. 136-161. and Chapter 6 (Theories of Primate Physical Cognition) pp. 162-186

WORK ON GROUP ESSAY ASSIGNMENTS

Feb. 29            **What primates know about their social world: Abstract social concepts**

1. Text: Tomasello & Call (1997). Chapter 7. Social Knowledge and Interaction (including intro), pgs. 187-230.
2. Seyfarth, R. M., & Cheney, D. L. (2000). Social awareness in monkeys. *American Zoologist*, 40(6), 902-909.
3. Bergman et al. (2003). Hierarchical classification by rank and kinship in baboons. *Science*, vol. 302 pp. 1234-36.

WORK ON GROUP ESSAY ASSIGNMENTS

March 7            **Social Knowledge Continued: Theory of Mind, Intentionality and perspective-taking**

1. Text: Tomasello & Call (1997). Chapter 10 "Theory of Mind", pgs. 311-341.
2. Hare (2002) Can competitive paradigms increase the validity of experiments on primate social cognition? *Anim. Cogn.* 4: 269-280.
3. Tomasello, Call & Hare (2003). Chimpanzees understand psychological states – the question is which ones and to what extent? *TRENDS in Cognitive Sciences* Vol.7 No.4 pp. 153-65.
4. Amici et al. 2009. Spider monkeys and capuchin monkeys follow gaze around barriers: Evidence for perspective taking? *Journal of Comparative Psychology*, vol 123, n. 4, pp. 368-74.
5. Whiten, A. (2013) "Humans are not alone in computing how others see the world." *Animal Behaviour* 86.2: 213-221.

March 14            **Primate Communication: What do primate signals mean and/or do?**

1. Text: Tomasello & Call (1997). Chapter 8. Social Strategies and Communication, pgs. 231-260 (up to 8.4).
2. Seyfarth, Cheney & Marler (1980). Monkey responses to three different alarm calls: Evidence of predator classification and semantic communication. *Science*, 210, 801-803.
3. Owren, MJ. & Rendall, D. 2001. Sound on the rebound: Bringing form and function to the forefront in understanding nonhuman primate vocal signaling. *Evolutionary Anthropology*, 10, 58-71.
4. Arnold, K. & Zuberbühler, K. 2006. Language evolution: semantic combinations in primate calls. *Nature*, 441, 303.

HAND IN GROUP ESSAY ASSIGNMENTS

March 21            **Speak no evil: "Language" in apes and humans**



1. Text: Tomasello & Call (1997). Chapter 8. Social Strategies and Communication, pgs. 260-272.
2. Savage-Rumbaugh, E. S; Rumbaugh, D. M.; Boysen, S. (1980). Do apes use language? *American Scientist*, Vol 68(1), Jan-Feb 1980, 49-61.
3. Tomasello, M. (2007). If they're so good at grammar, then why don't they talk? Hints from apes' and humans' use of gestures. *Language Learning and Development*, 3, 133-156.
4. Cohen, J. 2010. Boxed about the ears, ape language research is still standing. *Science* April 2, Vol 328, pp. 38-39.

Film: Can Chimpanzees Talk?

March 28      **“Culture” in primates and humans**

1. Text: Tomasello & Call (1997). Chapter 9, pgs. 273-310.
2. **Whiten A, Goodall J, Mc Grew WC, Nishida T, Reynolds V, Sugiyama Y, Tutin CEG, Wrangham RW, Boesch C (1999)** Cultures in chimpanzees. *Nature* 399:682–685
3. **Sarah Marshall-Pescini, Andrew Whiten (2008)** "Chimpanzees (Pan troglodytes) and the question of cumulative culture: an experimental approach."; *Animal Cognition*; 11:449-456.
4. **Gruber, T., Zuberbühler, K., Clément, F., & van Schaik, C. (2015).** Apes have culture but may not know that they do. *Frontiers in psychology*, 6.

April 4      **A Theory of Primate Cognition**

1. Text: Tomasello & Call (1997). Chapters 11 and 12 pp. 342-400.
2. **Barrett, L., Henzi, P., & Dunbar, R. (2003).** Primate cognition: from ‘what now?’ to ‘what if?’. *Trends in cognitive sciences*, 7(11), 494-497.
3. **Barrett, L. & Henzi, P. (2007).** The social nature of primate cognition. *Proc. R. Soc. B* (2005) 272, 1865–1875.
4. **Herrmann, E., Call, J., Hernández-Lloreda, M. V., Hare, B., & Tomasello, M. (2007).** Humans have evolved specialized skills of social cognition: the cultural intelligence hypothesis. *Science*, 317(5843), 1360-1366.

April 11      Catch-up and discussions - a built in “free class”, in case it’s needed (there is the possibility of a class cancellation in March)...