

Comparative Cognition
BC 3372
M 11:00am – 12:50pm
Fall 2006

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This seminar will focus upon comparative research investigations of animal and human cognition. The aim of the course is to provide you with an understanding of current experimental animal and human studies on issues such as explicit and implicit memories, language, consciousness, and metacognition. Topics will assess whether certain cognitive processes exist only in the human species, or whether they exist as well in non-verbal animals. Much of the class sessions will be spent critically discussing prior experimental work, and brainstorming new experimental methods in which to test basic human cognitive processes in non-human animals.

The required reading for the course will be *“The Missing Link in Cognition: Origins of Self-Knowing Consciousness”* edited by Herb Terrace and Janet Metcalfe. It is available now at the Labyrinth Bookstore on 112th St. between Broadway and Amsterdam. Before each class meeting, you will also read, summarize, and formulate discussion questions about one other scientific article (your choice, but some suggestions are listed below) that investigates an issue under that week’s topic. The summaries and questions will be due each Friday, prior to Monday’s class. Discussion leaders are also urged to go beyond those readings when further background knowledge is necessary for the class discussion.

During the first class meeting, each person will sign up to be a co-leader for two of the seminar meetings. Leaders will be responsible for planning the discussion of each week’s reading. With the help of other participants’ discussion questions, leaders must identify the core issues and organize them into a logical sequence of topics for group discussion and debate. As discussion leaders, it is not your job to explain the readings to others or review the important points of each paper. Instead, your job is to provide some framework that seems sensible for discussing the topic. Most of each discussion should focus on identifying complexities in the research, including brainstorming about possible experiments that could be conducted to address these issues.

Students in the course must read each week’s assigned readings prior to the class meeting. Your questions must reflect thoughtful analysis of the issues presented in the readings and should be neither overly general (e.g., “What is consciousness?”) nor limited to small details (e.g., “Did they have adequate statistical power in that study?”). Examples of good questions include addressing the issues of whether language is necessary for conscious thought or necessary for explicit memory processing, or whether behavioral measures are comparable to verbal self reports.

There will be 1 term paper (15-20 pages in length) that will be due on the last day of classes, and a classroom presentation consisting of a 10-minute powerpoint discussion. A 1-page description for your paper topic is due on October 30th. The final paper should take the form of a proposal for an experimental investigation of any aspect of the lecture material or readings. The proposal should contain a terse but cogent introduction and a detailed method section. You are then to provide a brief description of the expected results and their implications for the hypothesis. Papers must be written in accordance with the APA Publication Manual (5th edition).

Your grade breakdown will be as follows: Discussion Questions: 20%; Discussion Leadership: 20%; Classroom Presentation: 25%; Term Paper: 35%

WEEKLY DISCUSSION TOPICS, REQUIRED CHAPTER AND SUGGESTED READINGS

1. Organizational Meeting Sept 11
2. Autonoetic Consciousness Sept 18
 1. Tulving chapter
 2. Wheeler, M.A., Stuss, D.T., & Tulving, E. (1997). Toward a theory of episodic memory: The frontal lobes and autonoetic consciousness. *Psychological Bulletin*, 121, 331-354.
3. Philosophical Background Sept 25
 1. Descartes, R., Ryle, G., & Bergson, H. (1990). Consciousness and the philosophy of mind. In J. Pickering & M. Skinner(Eds.), *From sentience to symbols: Readings on consciousness*. (pp. 8-35).
4. Episodic Memory Oct 2
 1. Schwartz chapter
 2. Menzel chapter
 3. Menzel, C. R. (1999). Unprompted recall and reporting of hidden object by a chimpanzee (Pan troglodytes) after extended delays. *Journal of Comparative Psychology*, 113, 426-434.
5. Human Metacognition Oct 9
 1. Nelson, T.O., & Narens, L. (1990). Metamemory: A theoretical framework and new findings. In G. Bower (Ed.), *The psychology of learning and motivation* (Vol 26, pp. 125-141). San Diego, CA: Academic Press.
 2. Benjamin, A.S., Bjork, R.A., & Schwartz, B.L. (1998) The mismeasure of memory: When retrieval fluency is misleading as a metamnemonic index. *Journal of Experimental Psychology: General*, 127, 55-68.
6. Animal Metacognition Oct 16
 1. Smith chapter
 2. Hampton chapter
 3. Hampton, R.R. (2001). Rhesus monkeys know when they remember. *Proceedings of the National Academy of Sciences*, 98, 5339-5362.
7. Explicit/Implicit Metacognitive Processes Oct 23
 1. Son & Kornell chapter
 2. Kornell, N. K., Son, L. K., & Terrace, H. (2007). Transfer of Metacognitive Skills and Hint Seeking in Monkeys. *Psychological Science*.
8. Theory of Mind Oct 30
 1. Metcalfe & Kober chapter
 2. Frith, U., Morton, J., & Leslie, A.M. (1991). The cognitive basis of a biological disorder: Autism. *Trends in Neurosciences*. 14, 433-438.
9. Self-awareness/Paper Topics Due Nov 13
 1. Call chapter
 2. Gallup, G. G. (1970). Chimpanzees: Self-recognition. *Science*, 296, 306-307.
 3. Tomasello, M. (2001). Cultural transmission: A view from chimpanzees and human infants. *Journal of Cross-Cultural Psychology*, 32, 135-146.
 4. Povinelli, D.J., & Eddy, T.J. (1996). Chimpanzees: Joint visual attention. *Psychological Science*. 7, 129-135.
10. Empathy/Deception Nov 20
 1. Povinelli, D.J., Nelson, K.E., & Boysen, S.T. (1992). Comprehension of role reversal in chimpanzees: Evidence of empathy? *Animal Behaviour*, 43, 633-640.
 2. Savage-Rumbaugh, S., Rumbaugh, D.M., & Boysen, S. (1978). Symbolic communication between two chimpanzees (Pan troglodytes). *Science*. 201, 641-644.

11. Developmental Consciousness Nov 27
1. Nelson chapter
 2. Block chapter
 3. Kinsbourne chapter
12. Language/Declarative Memory/Papers Due Dec 4
1. Terrace chapter
 2. Gardner, R.A., & Gardner, B.T. (1967). Teaching sign language to a chimpanzee: I. Methodology and preliminary results. *Psychonomic Bulletin*, 2, 36.
 3. Terrace, H. S., Son, L. K., & Brannon, E. M. (2003). Serial expertise of rhesus macaques. *Psychological Science*, 14, 66-73
13. Presentations/Final Papers Due Dec 11