

Psychology 550L and CCT 651L: Advanced Cognitive Psychology Syllabus: Fall 2010

Instructor: Carol L. Smith
Office: M/4/265
Phone: 617-287-6359
Email: Carol.Smith@umb.edu
Course website: <http://psych.umb.edu/faculty/smith/cogpsych.htm>
Class Time: Tuesday, 4-6:30 PM (S/4/64)
Office Hours: Monday and Tuesday, 1-2:30 PM and by appointment
Course Withdrawal, Pass/Fail Date: Friday, Nov. 12th

Course Description and Goals:

The goal of the course is to introduce students to the contemporary field of cognitive psychology--its key questions, methods, findings, debates, and proposed models and theories. How is the mind designed that allows it to function so well in the everyday world? To what extent does the mind have both *modular* and *general purpose* components? What might be the advantages and disadvantages of this form of design? How is information *represented* in the different components, and how does form of representation affect inference, thinking, and problem solving? What changes occur in thinking and problem solving with the development of expertise? Important topics considered include: perception, attention, consciousness, memory, meaning-based mental representations and imagery, language, thinking and reasoning, problem solving, and the nature of expertise. Throughout, we will pay special attention to identifying "important general principles" of how the mind functions, the evidence for those principles, and the applicability of the theories and findings to issues of improving learning and teaching.

Course Text and Readings:

- Daniel Reisberg. (2009) Cognition: Exploring the Science of the Mind. 4th edition. New York: W.W. Norton & Company.(Available for purchase in the bookstore. 4th edition comes packed with workbook and Zaps. Using 3rd edition of the text is also OK.)
- Supplementary readings: Available on E-Reserves in Healey Library. Course Password: Brain.

Course Requirements:

1. Weekly *general principles journal*: each entry about 1 typed single-spaced page, based on readings for upcoming week; submitted by email to Instructor by Monday 9AM. (Must complete 10 entries for course; see directions next page) (20%)
2. *Two papers* (that involve data collection and analysis)
 - a. Memory Paper (about 7 pages plus appendix) (20%) due **October 19**
 - b. Expert/Novice Paper (about 7 pages plus appendix) (20 %) due **November 23**
3. *A final paper* on a topic of your choice (about 10 pages) (20%) due **December 17**
4. *Attendance/participation* (20%)

Course Policies:

1. If you are having difficulty in completing an assignment or paper, please contact me to work out the problems. Extensions can be given in unusual circumstances. However, late papers will not be accepted if I have not given prior approval.
2. Incompletes for the course can only be given with prior consent of the instructor.
3. In accordance with Section 503 and 504 of the Rehabilitation Act of 1973 the University of Massachusetts Boston attempts to accommodate all students with certified "special needs". Through the Lillian Semper Ross Center for Disability Services various aids such as sign language interpreting, readers, testing accommodations, counseling, etc., are available to students. If you believe that you have such special needs you should contact the Center on the second floor of the Campus Center. If you need accommodations in order to complete course requirements, please contact the Ross Center for Disability Services (Location: Campus Center UL Rm 211; phone: 617-287-7466).
4. It is assumed that in this class each student will act in a professional and honest manner. Therefore, any student who engages in an act of Academic Dishonesty, plagiarizing a paper (copying from any source without quotes and referencing is plagiarizing), falsifying data, paraphrasing other student's weekly reactions, etc., will receive a failing grade for that assignment and in most cases a failing grade for the course.

Directions for Weekly General Principles Journal Entries

1. Based on the *new* readings for a given week, you should identify two "general principles" about how the mind works that you found interesting. You need to then provide two specific examples of each of those general principles and a brief critical commentary.
2. Entries for each general principle should include:
 - a. *A brief statement of the general principle*: typically one complete sentence. The principle should be stated in entirely your own words. It should be a pattern you have noticed and that is meaningful to you. It should include a verb, explain how or why something works the way it does, and be a claim that you think is true.
 - b. *Two specific examples* of the general principle. A general principle by its nature applies to more than one situation. Show that your principle has some generality by providing two different examples. Again, just one or two sentences for each example is fine.
 - c. *Brief critical reflection on the principle*: The critical reflection can take a variety of forms (and might vary from principle to principle). For example, you might consider why you found it interesting or significant, the questions you have about it, or its possible application to teaching and learning. You might consider how strong the evidence is for the principle, alternatives to the principle that should be considered, or possible limitations in the contexts to which the principle applies. Or, you might consider how this principle *connects* to other principles (from previous weeks). You only have to consider one of these things (or anything else that you think qualifies as a critical reflection). Again, a few sentences is fine.
3. Submit your entry for the coming week to me via email by **Monday 9 AM**. That will allow me to look over the entries prior to class, so I can build on some of your ideas during class.
4. Each week, you need to add at least one *new general principle* from the reading. If you noticed new instances of a previously stated principle, you can devote the other entry to an elaboration, refinement, or restatement of a previously mentioned principle. By the end, you should have identified at least ten different general principles, and perhaps many more.

Tentative Schedule of Readings, Topics, and Assignments

(Readings are to be completed prior to class meeting, except for class 1)

| <u>Date</u> | <u>Topic</u> | <u>Reading</u> |
|--|--|--|
| Introduction, Methods, Perception, and Attention | | |
| Sept. 7 | Introduction: What is cognitive psychology? Why is it important to me? | Reisberg, 1 |
| Sept. 14 | What kinds of data and evidence can we use? What contribution can cognitive neuroscience make? | Reisberg, 2 (pp.23-41) |
| Sept. 21 | How do we see? What is the role of unconscious and conscious processing, prior knowledge & information “in the stimulus?” | Reisberg, 2 (pp. 41-57) Reisberg, 3 |
| Sept. 28 | What is attention for? Is it necessary for perception? How much can we attend to at one time? Hand out directions for Paper 1: Memory | Reisberg, 4 *Treisman, Anne (1986) *Strayer & Drews (2007) |
| Human Memory Systems | | |
| Oct. 5 | What is the structure and function of the working memory system? | Reisberg, 5 *Baddeley, Alan (1992) |
| Oct. 12 | How accurate are our memories? What factors affect memory accuracy? | Reisberg, 7 *Bartlett, Sir Frederic (1932) *Loftus, Elizabeth (1997) |
| Oct. 19 | What facilitates retrieval from long-term memory? How does emotion affect memory? Hand in Paper 1 | Reisberg, 6 *Geiselman et al (1986) *LeDoux (2002) |
| Knowledge Representation, Problem Solving & Expertise | | |
| Oct. 26 | Knowledge representation: How are factual & conceptual knowledge represented in long term memory? Hand out directions for Paper 2: Expert/Novice Differences | Reisberg, 8, 9 |
| Nov. 2 | How do experts differ from novices? How does one become an expert in a domain? | *Bransford, John et al. (2000) *Ericsson & Charness (1994) |
| Nov. 9 | What methods are useful in problem solving? In what ways do experts solve problems differently than novices? Hand in Proposed Topic for Final Paper | Reisberg, 14 *Wineberg (1998) |

| | | |
|---------|---|--|
| Nov. 16 | What is language? How does language affect thought? What are differences in expert/novice writers? | Reisberg, Chapter 10 *Scadamalia/Bereiter (1987) *Deutscher (2010) |
| Nov. 23 | How are images represented? How does imagery affect the development of thought? Hand in Paper 2 | Reisberg, Chapter 11 |

Reasoning, Decision Making, and “Mindfulness”

| | | |
|---------|--|--|
| Nov. 30 | How do we draw conclusions from evidence? What shortcuts do we use? How can our thinking be improved? Hand in Proposed References for Final Paper | Reisberg, Chapter 12 *Lehman, et. al. (1988) |
| Dec. 7 | What is the role of conscious/unconscious processing in decision making? How can decision making be improved? | Reisberg, Chapter 13 *Bechara et al (1997) *Masicampo (2002) |
| Dec. 14 | What have we learned about the human mind? Who is in charge? Are their benefits of “mindfulness”? | Reisberg, Chapter 15 *Brown et al (2007) *Wilson (2002) |

Dec. 17 Final Paper due

Full Bibliographic Information on Articles on E-Reserves (listed in order of reading):

September 28:

*Treisman, Anne (1986) Features and objects in visual processing. *Scientific American*, 255 (5), 114-125.
 *Strayer, D. and Drews, F. (2007) Cell-Phone-Induced Driver Distraction, *Current Directions in Psychological Science*, 13(3), 128-131.

October 5:

*Baddeley, Alan (1992) Working memory. *Science*, 255, 556-559.

October 12:

*Bartlett, Sir Frederick (1932). Chapter 5: Experiments on remembering: The method of repeated reproduction (pp. 63-93) in *Remembering*. Cambridge, England: Cambridge University Press.
 *Loftus, Elizabeth (1997) Creating false memories, *Scientific American*, (September 1997)

October 19

*Geiselman, E.E., Fisher, R.P, MacKinnon, D.P. & Holland, H.L (1986) Enhancement of eyewitness memory with the cognitive interview. *American Journal of Psychology*, 99, 385-401.
 *LeDoux, Joseph. (2002). Emotion, memory and the brain, *Scientific American* (The hidden mind)

Nov. 2

*Bransford, J., Brown, A. & Cocking, R. (Eds.) chapter 2: How experts differ from novices. In *How People Learn: Brain, Mind, Experience and School* (pp. 31-50).

*Ericsson, Anders and Charness, Neil (1994) Expert performance: Its structure and acquisition. *American Psychologist*, 49, 725-747.

November 9:

*Wineberg, Sam (1998) Reading Abraham Lincoln: An expert/expert study in the interpretation of historical texts. *Cognitive Science*, 22, 319-346.

November 16:

*Deutscher, G. (August 27, 2010). Does your language shape how you think? *New York Times Magazine*,

*Scadamalia, M & Bereiter, C. (1987) Knowledge telling and knowledge transforming in written composition. In S. Rosenberg (Ed.), *Advances in Applied Linguistics*, 2, 142-175.

November 30:

*Lehman, D., Lempert, R., & Nisbett, R. (June 1988), The effects of graduate training on reasoning: Formal discipline and thinking about every-day events, *American Psychologist*, 431-442.

December 7:

Bechara, A., Damasio, H., Tranel, D., and Damasio, A. (1997) Deciding advantageously before knowing the advantageous strategy, *Science* 275 (February 1995), 1293-1295.

*Masicampo, E.J. and Baumeister, R. Toward a Physiology of Dual-Process Reasoning and Judgment: Lemonade, Willpower, and Expensive Rule-Based Analysis, *Psychological Science*, 255-260.

December 14:

*Brown, K., Ryan, R., & Crewsell, J. (2007) Mindfulness: Theoretical Foundations and evidence for its salutary effects, *Psychological Inquiry*, 18(4), 211-237.

*Wilson, Timothy. (2002). Who's in charge? In: *Strangers to ourselves: Discovering the adaptive unconscious* (pp. 43-66). Cambridge, MA: Harvard University Press.

Criteria for Evaluating Class Participation:

- 1) Has consistent and faithful class attendance (arrives on time, present for the whole class)
- 2) Gives evidence of coming to class prepared (having done readings) (e.g., by submitting general principles on time and prior to class)
- 3) Makes contributions to class discussions: Raises thoughtful questions about readings, makes insightful connections between readings and everyday experiences; actively participates in class activities; supports learning of other class members

Criteria for Evaluating General Principles Journal:

- 1) Weekly entries fit guidelines given (i.e., identify a principle—rather than state a definition or fact; provide two examples of that principle; provide a brief critical reflection on principle, etc.)
- 2) Entries are clearly written and insightful
- 3) 10 entries are submitted

