

PSY 414
RESEARCH IN MEMORY & THINKING

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Goals for course

To give you the opportunity to become more intellectually involved with a variety of memory concepts that can only be briefly addressed in the cognition class. We will explore many of these issues at several levels, from the most basic theoretical levels to the most accessible applied level. To accomplish this goal, I have chosen journal articles and book chapters by some of the strongest and most well-known researchers in the field. Often, well-known researchers gain their reputation by not only being creative and careful researchers but also by being interesting writers. This brings up a second goal of the course...

To bring you into contact with examples of excellent scientific writing in an effort to improve your own writing ability. One of the best ways to improve your writing is to take careful note of others' writing styles. As you are reading, pay attention to the words and phrases that the researchers choose and the concise nature of their writing. A common mistake of novice writers is to be too wordy or use unnecessarily complex terms. The writing style of each researcher differs but please take note of the strengths and weaknesses of what you read.

To increase your understanding of careful research methodology, especially as it pertains to cognition research. All of you have had the opportunity to receive an excellent education in research methods. As we discuss the empirical articles we will specifically address the strengths and weaknesses of the researchers' methodologies. It is important to understand the rationale of a research design and to learn to critically evaluate its strengths and weaknesses

To encourage you to develop your own inner scientist. A mark of intelligence is curiosity, which is itself marked by good questions. As we read through original source material and book chapters, you should begin to ask yourself (and your classmates), *What might have happened if the researchers had done X?* or *Could this data have been interpreted to suggest Y?* By beginning to ask your own questions you begin to form your own, unique, research questions.

To provide you the experience of designing, conducting, analyzing and presenting your own independent and novel research project. This experience enables you to better understand the research of others and will make you more interested in much of the research you come into contact with. Further, the experience is especially important for anyone who might be considering graduate school.

Plan and expectations for the course

A plan for reading and writing assignments is included in this syllabus and on the website. Any changes to this schedule will be posted on-line and you are expected to regularly check the site to insure you are on schedule. Like the other *Research in...* classes, this course is a seminar. This means you must contribute to discussion and you must pose questions and thoughtful analysis of the materials we read. I will serve as director, moderator and, perhaps, facilitator. But, you are the teachers. I take that assignment seriously and I expect you will as well

For the course, you should have access to the 2nd edition of Gillian Cohen's *Memory in the Real World*. The book brings many of the concepts we are covering into a more applied (real world) setting and is quite well written. In addition to chapters from this text, we will also read original empirical papers, review articles and book chapters. Some of these are available in full text and you can access them from the website or my public folder. Others are on reserve in the High Library, listed by first author and publication date. The full reference for the articles can be accessed from the course website.

Active class attendance is expected and you are responsible for completing all reading. Late assignments will not be accepted. If you will miss class on the day an assignment is due, you can either e-mail the assignment or turn it in prior to the due date. Clearly, cheating is not allowed and can be cause for failure of the course. It is understood that all work in this course is yours. You are expected to adhere to the guidelines provided in Academic Integrity at Elizabethtown College.

Course Requirements

Seminar leader (10%)

As I mentioned earlier, I expect you to serve a dual teacher-learner role in this course. To that end, each of you will choose 2 class sessions to serve as the discussion leaders. It should work out that each class meeting will have 2 leaders and I encourage you to work together to insure you are able to generate good discussion questions for your peers, that you are able to answer their questions and to generally direct the class. Since you will be providing discussion questions for your peers (see below) these questions must be e-mailed to your peers at least 3 days prior to the appropriate class meeting; this obviously requires you to read your articles/chapter ahead of time. I am certainly available to clarify questions or offer assistance outside of class to insure you feel comfortable leading the class. Your grade will be determined by the quality of your preparation and class leadership for each of the 2 sessions.

Discussion questions (30%)

For each reading assignment, you will be provided a set of questions to consider as you complete the readings. If you have been assigned multiple sources, some questions may encourage you to make connections across the sources- a skill that is very important to learn. In addition to these, you should generate one or more of your own questions that critically evaluates the rationale, research design or conclusions of the research or one that addresses similarities or differences across studies. These questions will serve as fodder for class discussion and you should have some potential responses in mind but need not write them down.

You will turn in your responses and your self-generated question at the end of each class and they will be assigned 1, 2 or 3 points based on the depth of thought you have demonstrated. These responses must be typed and should generally be about 1 – 1½ pages. You need not answer all questions but should at least give them all some thought. By addressing these questions, and generating your own, you not only come to class prepared to discuss the article but you will understand and remember the material much better.

Individual research project (50%)

Over the course of the semester, you will conduct an independent research project based on an *original* research idea/problem. The project will be broken into smaller pieces that will require you to review relevant research, create an original research question, devise an appropriate design, collect and analyze the data and generate your own conclusions based on the results. You will present your findings to your classmates and other faculty at the end of the semester in a poster session. For the project, you will complete several assignments during the semester, culminating in the final presentation and manuscript. You will receive more information on these assignments during class throughout the semester.

IRB proposal	5%	Final draft	10%
Introduction draft	5%	Final paper	20%
Intro/Meth draft	10%		

Peer reviews. (10%)

Peer review is a necessary aspect of scientific research as it provides the researcher with feedback on design rationale, conclusions, writing style and numerous other details of a project. It is important for you to learn how to provide and to receive critical evaluative feedback on a project. As a bonus, being able to see the writing style of peers can often help us refine and improve our own style. To this end, you will review three of your peers' first drafts and the quality of your reviews will, in turn, be evaluated.

Articles for Memory & Thinking

- Atkinson, R. & Shiffrin, R. (1971). The control of short-term memory. *Scientific American*, 225(2), 82-90. [Available at reserve desk]
- Baddeley, A. (2001). Is working memory still working? *European Psychologist*, 7(2) 85-97 [in public folder]]
- Craik, F. & Tulving, E. (1972). Levels of processing: A framework for memory research. *Journal of Verbal Learning & Verbal Behavior*, 11(6), 671-684. [Available at reserve desk]
- Conway, A., Cowan, N., & Bunting, M. (2001). The cocktail party revisited: The importance of working memory capacity. *Psychonomic Bulletin & Review*, 8(2), 331-235. [in public folder]
- Engle, R. W. (2001). What is working-memory capacity? In H. L. Roediger III & J. S. Nairne (Eds.), *The nature of remembering: Essays in honor of Robert G. Crowder* (pp. 297-314). Washington, DC: American Psychological Association. [in public folder]
- Grant, H., Bredahl, L., Clay, J., Ferrie, J., Groves, J., McDorman, T. & Dark, V. (1998). Context-dependent memory for meaningful material: Information for students. *Applied Cognitive Psychology*, 12(6), 617-623. *ILL requested*
- Kliegel, M., Martin, M., McDaniel, M. & Einstein, G. (2001). Varying the importance of a prospective memory task: Differential effects across time- and event-based prospective memory. *Memory*, 9(1), 1-11. [in public folder]
- Lutz, K. & Lutz, R. (1977). Effects of interactive imagery on learning: applications to advertising. *Journal of Applied Psychology*, 62, 493-498. [Available at reserve desk]
- Mecklenbräuker, S. & Hager, W. (1984). Effects of mood on memory: Experimental tests of a mood-state-dependent retrieval hypothesis and of a mood-congruity hypothesis. *Psychological Research*, 46(4), 355-376. *ILL requested*
- Memon, A., Hope, L., Bartlett, J. & Bull, R. (2002). Eyewitness recognition errors: The effects of mugshot viewing and choosing in young and old adults. *Memory & Cognition*, 1219-1227. [available at reserve desk]

- Miles, C. & Hardman, E. (1998). State-dependent memory produced by aerobic exercise. *Ergonomics*, *41*(1), 20-28. *ILL requested*
- Porter, S., Spencer, L. & Birt, A. (2003). Blinded by emotion? Effect of the emotionality of scene on susceptibility to false memories. *Canadian Journal of Psychology*, *32*(2), 165-175. [in public folder]
- Ronbinson-Riegler, B. & McDaniel, M. (1994). Further constraints on the bizarreness effect: Elaboration at encoding. *Memory & Cognition*, *22*(6), 702-712. [available at reserve desk]
- Saucier, D. M., Green S. M., Leason, J., MacFadden, A, Bell, S., & Elias, L. J. (2002). Are sex differences in navigation caused by sexually dimorphic strategies or by differences in the ability to use the strategies? *Behavioral Neuroscience*, *116*(3), 403-410. [available at reserve desk]
- Schacter, D. & Graf, P. (1986). Effects of elaborative processing on implicit and explicit memory for new associations. *Journal of Experimental Psychology: Learning, Memory & Cognition*, *12*(3), 432-444. [in public folder]
- Schacter, D. (1999) The seven sins of memory: Insights from psychology and cognitive neuroscience. *American Psychologist*, *54*(3), 182-203. [available in public folder]
- Schwartz, B., Travis, D., Castro, A. & Smith, S. (2000). The phenomenology of real and illusory tip-of-the-tongue states. *Memory & Cognition*, *28*(1), 18-27. [available at reserve desk]
- Smith, S. (1988). Environmental context-dependent memory. In G.M. Davis & D. M. Thomson (Eds.) *Memory in Context: Context in Memory*. (pp. 13-34). Oxford, England [available in public folder]
- Squire, L. (1992). Declarative and non-declarative memory: Multiple brain systems supporting learning and memory. *Journal of Cognitive Neuroscience*, *4*(3), 232-243. *ILL requested*
- Talarico, J. & Rubin, D. (2003). Confidence, not consistency, characterizes memories. *Psychological Science*, *14*(5), 455-461. [in public folder]
- Wagstaff, G., MacVeigh, J., Boston, R., Scott, L., Brunas-Wagstaff, J. & Cole, J. (2003). Can laboratory findings on eyewitness testimony be generalized to the real world? An archival analysis of the influence of violence, weapon presence, and age on eyewitness accuracy. *The Journal of Psychology*, *137*(1), 17-28. [in public folder]
- Wright, D. & Sladden, B. (2003). An own gender bias and the importance of hair in face recognition. *Acta Psychologica*, *114*(1), 101-114 [in public folder]

DATE	TOPIC		ASSIGNMENT DUE
T Jan. 18 th	Introduction of course		
Th Jan. 20 th	Overview of major concepts and research methods		Cohen chpt. 11 & 1
T Jan. 25 th	History of memory research	Information Processing model	Atkinson & Shiffrin, 1971
Th Jan. 27 th		Levels of Processing framework	Craik & Tulving, 1972
T Feb. 1 st	Working memory	Baddeley's Multiple Component model	Baddely 2001
Th Feb. 3 rd		Engle's Controlled Attention model	Engle, 2001; Conway et al., 2001 (see public folder; password = englelab)
T Feb. 8 th	Multiple memory systems	Theoretical discussion	Squire, 1992
Th Feb. 10 th		Empirical investigation of implicit vs explicit memory	Schacter & Graf, 1986 ³
T Feb. 15 th	Memory for intentions		Cohen chpt. 2, Kliegal et al., 2001
Th Feb. 17 th	Memory for places		Cohen chpt. 3; Saucier et al., 2002
T Feb. 22 nd	Role of imagery in memory		Robinson-Riegler & McDaniel, 1994 ³ , Lutz & Lutz, 1977
Th Feb. 24 th	Memory for people		Cohen chpt. 5; Wright & Sladden, 2003 **Introduction draft due**
T Mar. 1 st	Eyewitness testimony		Memon et al., 2002; Wagstaff et al., 2003; Porter et al., 2003
Th Mar. 3 rd	Memory for events		Cohen chpt. 4; Talarico & Rubin, 2003
T Mar. 15 th	Review of ethics		
Th Mar. 17 th	Project discussions		**IRB Proposal due**
T Mar. 22 nd	Encoding specificity		Smith, 1988; Grant et al., 1998
Th Mar. 24 th	State dependent memory		Mecklenbräuker & Hagen, 1984; Miles & Hardman, 1998 Introduction and Methods due **
Th Mar. 31 st	Metacognition		Cohen chpt 7; Schwartz et al., 2000 ² ,
T Apr. 5 th	Review of Statistics		
Th Apr. 7 th			
T Apr. 12 th	Collecting data, analyzing data and discussing results		
Th Apr. 14 th			
T Apr. 19 th			
Th Apr. 21 st			
T Apr. 26 th			**Complete draft due**
Th Apr. 28 th	Schacter's Seven Sins of memory		Schacter, 1999
T May 3 rd	Wrap up		**Peer reviews due**
Th May 5 th	Poster session		
	Final draft of research paper due by 5 p.m.		

