



University of Waterloo
Department of Psychology
Waterloo, ON, N2L 3G1

Psychology 398—Research in Memory Winter 2012

Class Location: PAS 3026 (ABC) **Time:** 10:30-12:20, Tues. & Thurs.

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Goals of the course

The goal of the course is to introduce you to the theoretical and practical aspects of memory research. Classes and readings will focus on popular topics in memory research with emphasis on the research process. As well, the course will focus on learning how to read and evaluate primary source material in a critical manner.

Course Content/Readings

There is no textbook for this course. Readings for the course will consist of primary source material (i.e., journal articles). The reason for the use of journal articles rather than a textbook is that textbooks tend to gloss over many of the details which are of interest to those interested in methods. Keep in mind that reading primary source material is typically much more challenging than textbooks so you should be prepared to read papers more than once.

Requirements and Grading Scheme

Quizzes (60%) There will be 9 short quizzes on Thursdays throughout the term. The best 8 of these will constitute 60% of your grade (7.5% each). You will be tested on in class material and required readings. Note that with this testing format there will be no cumulative tests or final exam.

Summary Presentation (12.5%) The course is centered on presentations and discussion. We will examine, in class, a number of published journal articles. Each student will present one such article to the class. You are expected to give a considerable amount of care and attention to the preparation of your presentation. It must be relatively concise, but you are the resource expert for

the paper that you are presenting. In other words, you should have a lot of the details of the paper at your fingertips (i.e., in memory) in the event that a question is asked (e.g., how many subjects were tested? were the conditions blocked or randomized? was factor Y significant in the analysis as a main effect? was there feedback after every trial? etc).

There should be enough detail that your audience can understand:

- (1) what question was investigated
- (2) what the experiment consisted of (i.e., explain what was actually manipulated, and how the experiment was done)
- (3) what the specific predictions were
- (4) what the data are (please **SHOW** us the data in the presentation)
- (5) what the analysis of this data said (without specifying the size of the F, or the degrees of freedom)
- (6) how the data fit or undermine the theoretical hypotheses.

You will be expected to submit your slides the day before your presentation so that they can be distributed to the other students in the class. Also, I strongly encourage you to meet with the instructor or TA (or at least send us your slides) a day or two prior to the presentation so that we can review the slides and make suggestions/recommendations if needed.

Written Component (12.5%) You will each choose one brief article taken from a journal. Please read the article and become familiar with the research in it. You will then write a 4 page research paper based on your article.

These papers will consist of two components:

- a) **Summary.** You should write a summary of your article, indicating the goal of the research, the design of the experiments, the principal results, and how these results were interpreted theoretically. This should be two typed, double-spaced pages (i.e., not an abstract). It should be clearly written in normal prose (i.e., not "point form").
- b) **Extension.** Using your own ideas, you should suggest one way in which the research in your article might be extended in a meaningful way. Provide sufficient methodological and theoretical detail for a good understanding of the experiment you propose. This should be a principled and substantive proposal, taking two pages. You are most welcome (and encouraged) to consult with me about your ideas.

The final product will be a 4-page paper (not longer), with 1-inch margins and *double-spaced*. Type font must not be smaller than 12-pitch elite. You may not use either of the Summary pages for Extension (or vice versa). Note that this paper is meant to be a self-contained task, so use of reference material is not required. A title page with a brief descriptive title of your own creation should be the first page of your submission. You are also responsible for keeping a copy of the final version of your paper.

Idea Presentation (10%) In the last two weeks of this class you will each give a brief (approx. 12 min.) presentation based on your paper. The first few minutes will be dedicated to providing a

very quick overview of the article you selected (Summary) and then you will describe the idea you outlined in your paper (Extension). We will discuss more details later on in class.

Participation (5%) Your participation is critical to this class being a success. As such, 5% of your grade will be based on the extent to which you are actively engaged throughout the term.

The Official Version of the Course Outline

If there is a discrepancy between the hard copy outline (*i.e., if students were provided with a hard copy at the first class*) and the outline posted on D2L, the outline on D2L will be deemed the official version. Outlines on D2L may change as instructors develop a course, but they become final as of the first class meeting for the term.

Students with Disabilities

The Office for Persons with Disabilities (OPD), located in Needles Hall, Room 1132, collaborates with all academic departments to arrange appropriate accommodations for students with disabilities without compromising the academic integrity of the curriculum. If you require academic accommodations to lessen the impact of your disability, please register with the OPD at the beginning of each academic term.

Concerns About the Course or Instructor (Informal Stage)

We in the Psychology Department take great pride in the high quality of our program and our instructors. Though infrequent, we know that students occasionally find themselves in situations of conflict with their instructors over course policies or grade assessments. If such a conflict arises, the Associate Chair for Undergraduate Affairs (Dr. Colin Ellard) is available for consultation and to mediate a resolution between the student and instructor. Dr. Ellard's contact information is as follows:

Email: cellard@uwaterloo.ca
Ph 519-888- 4567 ext 36852

A student who believes that a decision affecting some aspect of his/her university life has been unfair or unreasonable may have grounds for initiating a grievance. See Policy 70 and 71 below for further details.

Academic Integrity, Academic Offenses, Grievance, and Appeals

To protect course integrity, as well as to provide appropriate guidance to students, course outlines in the Faculty of Arts incorporate the following note on avoidance of academic offenses:

Academic Integrity: in order to maintain a culture of academic integrity, members of the University of Waterloo community are expected to promote honesty, trust, fairness, respect and responsibility.

Grievance: A student who believes that a decision affecting some aspect of his/her university life has been unfair or unreasonable may have grounds for initiating a grievance. Read Policy 70 - Student Petitions and Grievances, Section 4, <http://www.adm.uwaterloo.ca/infosec/Policies/policy70.htm>

Discipline: A student is expected to know what constitutes academic integrity, to avoid committing academic offenses, and to take responsibility for his/her actions. A student who is unsure whether an action constitutes an offense, or who needs help in learning how to avoid offenses (e.g., plagiarism, cheating) or about 'rules' for group work/collaboration should seek guidance from the course professor, academic advisor, or the Undergraduate Associate Dean. When misconduct has been found to have occurred, disciplinary penalties will be imposed under Policy 71 - Student Discipline. For information on categories of offenses and types of penalties, students should refer to Policy 71 - Student Discipline, <http://www.adm.uwaterloo.ca/infosec/Policies/policy71.htm>

Appeals: A student may appeal the finding and/or penalty in a decision made under Policy 70 - Student Petitions and Grievances (other than regarding a petition) or Policy 71 - Student Discipline if a ground for an appeal can be established. Read Policy 72 - Student Appeals, <http://www.adm.uwaterloo.ca/infosec/Policies/policy72.htm>

For further advice from the Faculty of Arts on the avoidance of academic offenses, see the following website:

http://arts.uwaterloo.ca/arts/ugrad/academic_responsibility.html

Schedule of Readings

Week 1 **January 3 & 5**

Organizational Meeting (Tues.)

History (Thurs.)

Bower, G. H. (2000). A brief history of memory research. In E. Tulving and F.I.M. Craik (Eds.), *The Oxford handbook of memory* (pp. 3-32). New York: Oxford University Press.

Week 2 **January 10 & 12**

Methods (Tues.)

Lockhart, R.S. (2000) Methods of memory research. In E.Tulving and F.I.M Craik (Eds.), *The Oxford handbook of memory* (pp.45-57). New York: Oxford University Press.

History/Future (Thurs.)

Hintzman, D. (2011). Research Strategy in the Study of Memory: Fads, Fallacies, and the Search for the "Coordinates of Truth". *Perspectives in Psychological Science*, 6(3) 253–271.

Week 3 **January 17 & 19**

Exceptional Memory (Tues.)

Ericsson, K. A., & Chase, W. G. (1982). Exceptional memory. *American Scientist*, 70, 607-615.

Brady, T.F. (2008) Visual long-term memory has a massive storage capacity for object details. *PNAS*, 105(38), 14325-14329.

Exceptional Memory (Synaesthesia) (Thurs.)

Yaro, C. & Ward, J. (2007) Searching for Shereshevskii: What is superior about the memory of synaesthetes? *The Quarterly Journal of Experimental Psychology*, 60(5), 681-695.

Week 4 **January 24 & 26**

Amnesia (Tues.)

Beecher Scoville, W. & Milner, B. (1957) Loss of Recent Memory After Bilateral Hippocampal Lesions. *J. Neurol. Neurosurg. Psychiat.*, 20, 11-21.

O'Kane et al. (2004) Evidence for Semantic Learning in Profound Amnesia: An Investigation With Patient H.M. *Hippocampus*, 14, 417-425.

Amnesia (Thurs.)

Tulving, E., Schachter, D. L., McLachlan, D. R., Moscovitch, M. (1988). Priming of semantic autobiographical knowledge: A case study of retrograde amnesia. *Brain & Cognition*, 8, 3-20.

Week 5 **January 31 & February 2**

Education (Tues.)

Roediger, H.L., & Karpicke, J. (2006). Test-Enhanced Learning: Taking Memory Tests Improve Long Term Retention. *Psychological Science*, 17(3), 249–255.

Pyc, M.A., & Dunlosky, J. (2010). Towards an understanding of students' allocation of study time: Why do they decide to mass or space their practice? *Memory & Cognition*, 38(4), 431–440.

Learning (Thurs.)

Kornell, N., Hays, M.J. & Bjork, R.A. (2009). Unsuccessful retrieval attempts enhances subsequent learning. *Journal of Experimental Psychology: Learning, Memory and Cognition*, 35, 989-998.

Week 6 **February 7 & 9**

Flashbulb Memories (Tues.)

Hirst, W., Phelps, E.A., Buckner, R.L., Budson, A.E., et al. (2009). Long-term memory for the terrorist attack of September 11: Flashbulb memories, event memories and the factors that influence their retention. *Journal of Experimental Psychology: General*, 138, 161-176.

Talarico, J.M. & Rubin, D.C. (2003). Confidence, Not Consistency, Characterizes Flashbulb Memories. *Psychological Science*, 14(5), 455–461.

Everyday Objects (Thurs.)

Nickerson, R. S., & Adams, M. J. (1979). Long-term memory for a common object. *Cognitive Psychology*, 11, 287-307.

Week 7 **February 14 & 16**

Eyewitness Memory (Tues.)

Chan, J.C.K., Thomas, A.K. & Bulevich, J.B. (2009). Recalling a Witnessed Event Increases Eyewitness Suggestibility: The Reversed Testing Effect. *Psychological Science*, 20(1), 66–73.

Lane, S. M. (2006). Dividing attention during a witnessed event increases eyewitness suggestibility. *Applied Cognitive Psychology*, 20, 199-212.

Everyday Events (Thurs.)

Loftus, E.F. et al. (1992). Who Remembers Best? Individual differences in memory for events that occurred in a science museum. *Applied Cognitive Psychology*, 6, 93-107.

Reading Week

Week 8 **February 28 & March 1**

Cognitive Training (Tues.)

Basak, C., Boot, W.R., Voss, M.W. & Kramer, A.F. (2008). Can training in a real-time strategy video game attenuate cognitive decline in older adults? *Psychology and Aging*, 23, 765-777.

Willis, S.L., Tennstedt, S.L., Mariske, M., Ball, K., et al. (2006). Long-term effects of cognitive training on everyday functional outcomes in older adults. *Journal of the American Medical Association*, 296, 2805-2814.

Ability (Thurs.)

de Jonge, P., & de Jong, P. (1996). Working Memory, Intelligence and Reading Ability in Children. *Person. Individ. Diff.*, 21(6), 1007-1020.

Week 9 **March 6 & 8**

Implicit/Explicit Memory (Tues.)

Tulving, E. (1985). Memory and consciousness. *Canadian Psychology*, 26(1), 1–12.
Whittlesea, B.W.A. & Price, J.R. (2001). Implicit/explicit memory versus analytic processing: Rethinking the mere exposure effect. *Memory and Cognition*, 29(2), 234–246.

Unconscious Memory (Thurs.)

Merikle, P.M. & Daneman, M. (1996). Memory for Unconsciously Perceived Events: Evidence from Anesthetized Patients. *Consciousness and Cognition*, 5, 525–541.

Week 10

March 13 & 15

Episodic Memory (Tues.)

Ezzyat, Y. & Davachi, L. (2011). What Constitutes an Episode in Episodic Memory? *Psychological Science*, 22(2), 243–252.

Hemmer, P. & Steyvers, M. (2009). Integrating episodic memories and prior knowledge at multiple levels of abstraction. *Psychonomic Bulletin and Review*, 16(1), 80–87.

WM & Dual-process theories (Thurs.)

Barrett, L. F., Tugade, M. M., & Engle, R. W. (2004). Individual differences in working memory capacity and dual-process theories of the mind. *Psychological Bulletin*, 130, 553-573.

Week 11

March 20 & 22

Idea Presentations

Week 12

March 27 & 29

Idea Presentations

Important Dates

Quizzes: Jan. 12, 19, 26; Feb. 2, 9, 16; March 1, 8, 15

Paper due: March 15

Summary Presentations: Will vary by individual. Here is a place to write a reminder of when you are presenting: _____

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