<div align="center">

Research in Cognition and Perception
Psychology 394
Winter 2009

</div>

Instructor: Derek Besner
E-mail: dbesner@uwaterloo.ca
Office: PAS 4034
Office Hours: If you want to set up a meeting or ask questions outside of class, then I welcome you e-mailing me (dbesner@uwaterloo.ca) or coming to my office (I'm happy to see students in my office at most times, or, failing that, to set up a time to meet). You can always email me with questions (including most nights and weekends). I try to answer all questions over email within several hours.

<div align="center">

Class Location: HH 139
Time: 10:30-12:20, Tues/Thurs
Teaching Assistant: Stacey Danckert
E-mail: sdancker@uwaterloo.ca
Office: PAS 4043
Office Hours: by appointment

</div>

Course Objective

The objective of this course is to introduce the student to some of the basic methodology involved in typical psychological research in the content area of cognition and perception. The main emphasis is on preparing the student to critically evaluate different types of published research (e.g., standard reports of experiments on intact subjects involving simple or factorial designs; single case studies of brain damaged patients; computational modeling). Journal articles will be studied to see what they can tell us about research methodology, and the interaction between theory development and the process of experimentation. To this end, we will read, and students will present, work spanning the last 35 years.

Over the last 25 years I've experimented with different approaches to this course. One approach has been to pick different papers in different content areas to illustrate various issues concerning design, analysis and interpretation. This approach has a serious limitation, consisting of not enough continuity for the student. Much of cognitive psychology is rather abstract, and undergraduates find it challenging because simple intuition isn't very helpful in this context. Rather, one has to work with a theory and generate experiments which follow from that theory. I've therefore adopted an approach in which we concentrate on apparently simple questions (e.g., how do we recognize words; how do we read them aloud?) because (a) there is a rich literature on these issues spanning the last 3 decades or so, (2) they allow us to explore rather different approaches (as I noted above: factorial designs, single case studies, computational modeling), and (c) there are a lot of basic issues that can be addressed. For example, what is the nature of the underlying representations we use (e.g., localist versus distributed) how does processing take place (serial vs parallel; discrete vs cascaded vs interactive-activation); what is the nature of the codes we use for lexical/semantic access (orthographic vs phonological); how does semantic context work; how automatic is visual word recognition; how much does mental set matter (if at all), what role, if any, is played by "attention"? Is attention a singular process or can it be separated into different kinds? What kind of "control" if any, can readers exert over processing?

To put it another way, the goals are to try to help you to:
        (1) read a paper in the content area of cognitive processes
        (2) better understand design problems, statistical issues, and underlying
        assumptions that are often not explicit
        (3) convey to people something about what you have read in a way that is clear
        and concise (self presentation, in many aspects of life, is an important skill).

Hopefully, this course will help you to better understand and appreciate some of what it is that cognitive psychologists do, and to understand how, with training and guidance, it is possible to do high quality research. (Many of the papers we will read are senior authored by graduate students here at Waterloo, and at least one paper is senior authored by an undergraduate).

Course Components and Grading Scheme

1. Presentation(s) and Participation (15%)

We will examine, in class, a fair number of published journal articles. Each student will present *at least* 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 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). **However, please avoid going into too much detail during your presentation**. 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 on an overhead**)
        (5) what the analysis of this data reveals (without specifying the size of the F, or
         the degrees of freedom)
        (4) how the data fit or undermine the theoretical hypotheses.

By "class participation" I mean being responsive to what is going on in the class. For example, listening attentively when students are presenting papers such that you can answer questions about what they are saying. **Be prepared to answer questions with respect to the ongoing presentation and discussion (I'm a big believer in a variant of the Socratic method).**

2. Weekly Quizzes (25%)

There will be a short 10 question multiple choice **quiz** on Thursday of each week **at the beginning of class** (but not in the first week of class). These quizzes can not be made up if you are absent. There is no quiz on the weeks we have **tests**. Note: There is no penalty for guessing, therefore make sure you indicate an answer for each question. You have 15 minutes for these quizzes. These quizzes are not cumulative.

3. Tests (total = 60%, each = 20%)

There will be three tests. These tests will take place on **Thursday January 29, Thursday March 5, and Thursday April 2**. The tests are not cumulative, and they consist of between 25 and 35 multiple choice questions.

There is no final exam. A detailed reading list will be available next meeting.

TENTATIVE Schedule and Assigned Readings

The course has no textbook. Our readings consist of primary source materials: journal articles and the odd chapter).

Date	Topics and Articles
Tuesday January 6	Review the syllabus
Thurs January 8	I will sketch the outlines of a general framework that we will use throughout the term, pose some questions, and briefly discuss why (a) we might want to study individual subjects rather than groups of subjects when considering brain damaged performance (but why not intact subjects?), and (b) the issue of associations versus dissociations in performance, and double dissociations versus single dissociations. Following this, presentations will be assigned to individual students for the upcoming weeks. It is in the students interest to see me or Stacey with an outline of your presentation well before you will actually present so that we can help tune it. Obviously, reading the paper before starting to work on your outline of the presentation is a necessary preliminary.

Computer information

All undergraduate students in the Faculty of Arts may obtain a free computer account on Waterloo Polaris. The account gives students free access to applications such as word processing, statistical and graphics packages, spreadsheets, and electronic mail, as well as the Internet. Students are charged for printing and can put money for printing on to their Arts Computing Resources Account at PAS 1080 using their WATCARD. Instructions for obtaining a Polaris account are available from the Arts Computing Office. Course materials will be available on ACE. If there is a discrepancy between the hard copy outline and the outline posted on ACE, the outline on ACE will be deemed the official version.

Students with Disabilities

"Note for 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."

Academic Offences

"Note on avoidance of academic offenses: All students registered in the courses of the Faculty of Arts are expected to know what constitutes an academic offense, to avoid committing academic offenses, and to take responsibility for their academic actions. When the commission of an offense is established, disciplinary penalties will be imposed in accord with Policy #71 (Student Academic Discipline). For information on categories of offenses and types of penalties, students are directed to consult the summary of Policy #71 (Student Academic Discipline) which is supplied in the Undergraduate Calendar (p.1:11). If you need help in learning how to avoid offenses such as plagiarism, cheating, and double submission, or if you need clarification of aspects of the discipline policy, ask your course instructor for guidance. Other resources regarding the discipline policy are your academic advisor and the Undergraduate Associate Dean."

In addition, I would like to direct your attention to the following link to the Arts Faculty Web page,
"How to Avoid Plagiarism and Other Written Offences: A Guide for Students and Instructors"
(***http://watarts.uwaterloo.ca/~sager/plagiarism.html***)