PSYCHOLOGY 4BN3: Seminar in Behavioural Neuroscience
Features, Attention, and Objects

Each of us literally chooses, by his way of attending to things, what sort of a universe he shall appear to himself to inhabit.
—William James

General course Information

Class meeting time/place: Friday, 8:30-11:30, PC 204

Instructor: Eric D. Richards, PhD
Office: PC 428
Phone: 905-525-9140 x 24489
Email: erichar@mcmaster.ca
Office hours: by appointment.


Course Evaluation

NOTE: Dr. Richards reserves the right to alter the readings, and the weightings, details, and/or due-dates of assignments, as she deems necessary due to unforeseen circumstances.

Oral presentations (2 @ 15% = 30%)
Discussion questions (7 @ 1.5% = 10.5%)
Reaction papers (4 @ 5% = 20%)
Term paper (25%)
Class participation (14.5%)
Bonus marks (max 2%)

Oral presentations. Beginning January 14, each student will be required to give two oral presentations (students will work in small groups for each presentation). In preparation for their presentations, students are expected to gain expertise beyond the core readings assigned to the class by reviewing additional materials (determined by the students and in consultation with the instructor). The presentation entails briefly summarizing and integrating the readings for that week, and leading the class discussion of those readings. Students must meet with Dr. Richards at least a week before their oral presentation, and provide Dr. Richards with a list of additional materials and a rough outline for their presentation. The mark for each presentation will be based on a combination of peer assessment and instructor assessment.

Discussion questions. Each week (excluding their presentation weeks), students must submit a discussion question related to the specific assigned readings. The questions are due at the beginning of class, and the presenting group and instructors will select questions to incorporate into the class discussion. Questions may be posted on the Class Website to facilitate follow-up discussions. Late questions will not be accepted (if you will be missing a class, you must e-mail the questions to Dr. Richards in advance).
**Reaction papers.** Each week (excluding their presentation weeks), students may submit one short reaction paper (max 2 pages double spaced, excluding any figures), commenting on the readings for that week's class. The papers should comment on the strengths and weaknesses of the experiments/theories and the connections across readings, and pose questions for further research based on the critiqued readings. Critiques should be as specific as possible – both in the discussion of previous work and in the proposal of future experiments. When writing reaction papers, students should assume that the reader is familiar with the relevant readings (i.e., extended summaries of the articles are discouraged). If students submit more than 4 reaction papers, the top 4 marks will count toward the final mark. Reaction papers are due at the beginning of each class. Late reaction papers will not be accepted.

**Term paper.** A final term paper is due on April 6, 2005. The main text of the term paper should be a maximum of 10 pages (excluding title page, abstract, figures, tables, and references). The purpose of the term paper is to provide an integrative review of a research area within the general areas of attention/features/objects, and to propose an original experiment (or series of experiments) related to that area. The format of the paper should be that of a standard experimental psychology report, but with a "Predictions" section replacing the standard "Results" section. Topics for the term paper are not limited to those covered by the reading in this class, but Dr. Richards must approve all topics in advance (no later than March 4). Late papers will be penalized 10% per day late after April 6.

**Class participation.** Because this is a seminar class, it is essential that all students actively participate in the discussions of weekly topics. Simply attending class is not enough to earn a good mark. Students are expected not only to complete all readings before class, but also to have thought in-depth about the readings, and to come prepared with relevant questions/comments/ideas for discussion.

**Bonus marks.** Students can obtain a maximum of 2 bonus marks for attending approved colloquia and submitting a critique to Dr. Richards via email within one week of the colloquium. Each critique will count as one bonus mark (1%). Late critiques and critiques not sent via email will not be accepted. The critique should include a brief summary of the colloquium and questions/comments you have about the content and presentation. Approved colloquia: Departmental Colloquia, Behavioural Neuroscience Seminars, Animal Behaviour and Learning Seminars, Developmental Seminars, and Cognition/Perception Seminars. Note: Colloquium series do not meet every week; watch for postings on the Department Web Site and in the building. If you know about other colloquia that you think are appropriate, contact Dr. Richards for approval at least 2 weeks in advance.

**McMaster's Grading Scale**

90-100 A+; 85-89 A; 80-84 A-; 77-79 B+; 73-76 B; 70-72 B-; 67-69 C+; 63-66 C; 60-62 C-; 57-59 D+; 53-56 D; 50-52 D-; 0-49 F

The instructor reserves the right to adjust the final marks up or down, on an individual basis, in the light of special circumstances and/or the individual’s overall performance in the course.
Academic Dishonesty

Academic dishonesty consists of misrepresentation by deception or by other fraudulent means and can result in serious consequences, e.g. the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: “Grade of F assigned for academic dishonesty”), and/or suspension or expulsion from the university. It is your responsibility to understand what constitutes academic dishonesty. For information on the various kinds of academic dishonesty please refer to the Academic Integrity Policy, specifically Appendix 3, located at http://www.mcmaster.ca/senate/academic/ac_integrity.htm. The following illustrates only three forms of academic dishonesty: (1) Plagiarism, e.g. the submission of work that is not one’s own or for which other credit has been obtained. (2) Improper collaboration in group work. (3) Copying or using unauthorized aids in tests and examinations.

Course Schedule

1. January 7: Organization
2. January 14: Introduction
3. January 21: Visual Search 1
5. February 4: Attention and the Brain
6. February 11: Posner Cueing
7. February 18: Attentional Resources
8. February 25: FEB BREAK
9. March 4: Attention and identification
10. March 11: Location-based or object-based attention selection?
11. March 18: Reverse Hierarchies & Reentrant Visual Processes
12. March 25: GOOD FRIDAY
13. April 1: Change Blindness
14. April 6: PAPERS DUE!

***SEE THE NEXT PAGE FOR READINGS (ALSO SEE THE CLASS WEBSITE)***
Course Readings

1. January 7: Organization


   *See the class website for supplementary reading.

2. January 14: Introduction


   *See the class website for supplementary reading.

3. January 21: Visual Search 1


   *See the class website for supplementary reading.


   *See the class website for supplementary reading.

5. February 4: Attention and the Brain


   *See the class website for supplementary reading.

6. February 11: Posner Cueing


*See the class website for supplementary reading.

7. February 18: Attentional Resources


VanRullen, Reddy, Koch (2004), Visual Search and Dual Tasks Reveal Two Distinct Attentional Resources. Journal of Cognitive Neuroscience 16, 4-14

*See the class website for supplementary reading.

8. February 25: FEB BREAK

9. March 4: Attention and Identification


*See the class website for supplementary reading.

10. March 11: Location-based or object-based attention selection?


*See the class website for supplementary reading.

11. March 18: Reverse Hierarchies & Reentrant Visual Processes


*See the class website for supplementary reading.

12. March 25 – Good Friday
13. April 1: Change Blindness


Rensink, R.A., O'Regan, J. K. & Clark, J. J. (1997). To see or not to see: The need for attention to perceive changes in scenes. Psychological Science, 8, 368-373.


*See the class website for supplementary reading.

14. April 6 – Papers due!!

Other Useful Reviews of attention research


