

PSYCHOLOGY 365 SYLLABUS 2007

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Office hours: By *email* appointment.

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Course description: This course is designed to introduce students to investigations in cognitive neuroscience. Emphasis will be placed on learning how to read, think, discuss, and write about primary research articles in a critical and coherent manner.

Readings: Students are responsible for obtaining the papers (see for example UBC Library Ejournals).

Course policies: Material from the classes and the required readings will be on the exam. This class operates in a seminar format. Come prepared to discuss the readings.

Evaluation: Evaluations will be based on weekly quizzes, written reviews, an exam, and class participation.

Grade Breakdown

Weekly Quizzes	20%
Critique Papers (Each worth 20%)	40%
Exam	30%
Class participation	10%
Total	100%

1. Weekly Quizzes (20%)

At the start of every class (except for first class and the exam day) you will receive a quiz lasting 10 minutes. The quiz will concern one or more of the readings assigned for that day. Each quiz is worth 2% of your final grade. Missed quizzes will be assigned a grade of 0. You can drop the mark from one quiz. There will be no excused absences for quizzes. There will be no makeup quizzes. There will be no exceptions.

2. Critique Papers (40%)

You will be required to write two critical review papers each worth 20%, during the term. Each paper will involve an evaluation of a journal article (marked in bold below).

When reviewing a research article, summaries should provide an accurate description of (a) the rationale for the research described in the article, (b) the hypothesis and predictions, (c) the methods and procedures employed in the study, and (d) the pertinent experimental results and their importance.

You should also identify the main issues raised by the article and comment on them. Potential issues include (but are not restricted to): (a) questions regarding the research/argument/model presented in the article, (b) alternative interpretations for reported results or position, (c) proposals for follow-up experiments or alternative models (with predictions), (d) direct links to the psychology literature not made in the article. Critiques need not be negative in tone. For instance, you should always feel free to identify and discuss material that you found convincing, clever, etc. Similarly, suggestions for future experiments, methodological refinements, etc, also need not be negative. Indeed, writing a critical assessment of a research paper, with positive criticisms, is much harder to do than punching holes through an article.

The critiques must be typewritten. Maximum length -- 6 pages. Style: double-spaced; 12-point font; APA-style headings and references.

Papers are to be handed in at the start of class. Late reviews (i.e., those handed in after the start of class) will be deducted 1% from the original 20% each day that they are late, e.g., a review handed in the Wednesday morning after the Tuesday class will be deducted 2% from the total of 20%. You must deliver a hardcopy of the paper to me or to the TA. Sending the paper by email will not be accepted.

3. Exam (30%)

The exam will consist of short answer questions (definitions) and one or more essay questions. It will cover assigned readings and points discussed in class up to the end of Week #10. There will be no make up exams in this course. This means that if you miss an exam you will simply lose the number of points associated with it. Your grade will therefore be computed as if that particular entry was a zero. The only exceptions to this are validated medical excuses. Such excuses must be in the form of a written note from your doctor or from student health, attesting to the fact that on the day of the exam you were too ill to be expected to function reasonably. Please note, that although the Student Health Service will provide such validations for Final exams, they will not provide these for exams during term. Therefore in the event of a missed exam your medical excuse must be obtained from a private physician. If you should have a personal or psychological trauma and miss an examination, a written letter of explanation from your psychiatrist, psychologist, or student counselor must accompany such an excuse. A letter from the attending physician or clergyman must validate exams missed due to a death in the family. In the absence of such written verification you will not be excused. All medical excuses must be personally presented to me as soon as you are able to return to class for a make up to be scheduled.

4. Class Participation (10%)

Based on quality, not quantity.

Psychology Department's Position on Academic Misconduct

Cheating, plagiarism, and other forms of academic misconduct are very serious concerns of the University, and the Department of Psychology has taken steps to alleviate them. In the first place, the Department has implemented software that, can reliably detect cheating on multiple-choice exams by analyzing the patterns of students' responses. In addition, the Department subscribes to Turn It In--a service designed to detect and deter plagiarism. All materials (term papers, lab reports, etc.) that students submit for grading will be scanned and compared to over 4.5 billion pages of content located on the Internet or in TurnItIn's own proprietary databases. The results of these comparisons are compiled into customized "Originality Reports" containing several, sensitive measures of plagiarism; instructors receive copies of these reports for every student in their class.

In all cases of suspected academic misconduct, the parties involved will be pursued to the fullest extent dictated by the guidelines of the University. Strong evidence of cheating or plagiarism may result in a zero credit for the work in question. According to the University Act (section 61), the President of UBC has the right to impose harsher penalties including (but not limited to) a failing grade for the course, suspension from the University, cancellation of scholarships, or a notation added to a student's transcript.

All graded work in this course, unless otherwise specified, is to be original work done independently by individuals. If you have any questions as to whether or not what you are doing is even a borderline case of academic misconduct, please consult your instructor. For details on pertinent University policies and procedures, please see Chapter 5 in the UBC Calendar (<http://students.ubc.ca/calendar>) and read the University's Policy 69 (available at <http://www.universitycounsel.ubc.ca/policies/policy69.html>).

Further information about academic regulations, course withdrawal dates and credits can be found in the University Calendar. You are encouraged to read this material. If you run into trouble and need information about studying, preparing for exams, note taking or time management, free workshops and advice are available from the Student Resources Centre, which can be reached through the School and College Liaison Office at 822-4319.

READING ASSIGNMENTS

Week 2, September 11th: Getting in touch

- Botvinick, M., & Cohen, J. (1998). Rubber hands “feel” touch that eyes see. *Nature*, 391, 75
- Pavani, F., Spence, C., & Driver, J. (2000). Visual capture of touch; Out-of-the-body experiences with rubber gloves. *Psychological Science*, 11, 353-359.
- Lenggenhager, Tadi, Metzinger & Blanke (2007). Video Ergo Sum: Manipulating bodily self-consciousness. *Science*, 317, 1096-1099.

Week 3, September 18th: Blindsight

- Fendrich, R., Wessinger, M. C. & Gazzaniga, M. S. (1992). Residual vision in a scotoma: Implications for blindsight. *Science*, 258, 1489-1491.
- Milner, D. (1998). Insights into blindsight. *Trends in Cognitive Science*, 2, 237-238.
- Pons, T. P. et al (1991). Massive cortical reorganization after sensory deafferentation in adult macaques. *Science*, 252, 1857-1860.
- Stoerig, P., Weisenkranz, L., Fendrich, R., Wessinger, M. C. & Gazzaniga, M. S. (1993). Sources of Blindsight. *Science*, 261, 493-495.

Week 4, September 25th: Neglect

- Marshall JC & Halligan PW. (1988). Blindsight and insight in visuo-spatial neglect. *Nature*, 336, 766-7.
- Rafal R., Danziger, S., Grossi, G., Machado, L. & Ward, R. Visual detection is gated by attending for action: Evidence from hemispatial neglect. *Proceedings of the National Academy of Sciences*, 99, 16371-16375
- Ro, T & Rafal, R. D. (1996). Perception of geometric illusions in hemispatial neglect. *Neuropsychologia*, 34, 973-978.
- Vuilleumier, P. (2000). Faces call for attention: Evidence from patients with visual extinction. *Neuropsychologia*, 38, 693-700.

Week 5, October 2nd: Savants and autism

- Baron-Cohen, S. (2000). Is asperger syndrome/high-functioning autism necessarily a disability? *Development and Psychopathology*. 12, 489-500

Dalton, K. M., Nacewicz, B. M., Johnstone, T., Shaefer, H. S., Gernsbacher, M. A., Goldsmith, H. H., Alexander, A. L., & Davidson, R. J. (2005). Gaze-fixation and the neural circuitry of face processing in autism. *Nature Neuroscience*, 8, 519-526.

Klin, A., Jones, W., Schultz, R., Volkmar, F., & Cohen, D. (2002). Visual fixation patterns during viewing of naturalistic social situations as predictors of social competence in individuals with autism. *Archives of General Psychiatry*, 59, 809-816.

Snyder, A. Bahramali, H., Hawker, T., Mitchell, D.J. (2006). Savant-like numerosity skills revealed in normal people by magnetic pulses. *Perception*, 35 837–845.

Week 6, October 9th: Synaesthesia

Dixon, Smilek, Cudahy, & Merikle, (2000). Five plus two equals yellow. *Nature*, 406, 365.

Dixon, M.J., Smilek, D. & Merikle, P. (2004), "Not all synaesthetes are created equal: Projector versus associator synaesthetes", *Cognitive, Affective & Behavioral Neuroscience*, 4, 335-343.

Grossenbacher & Lovelace (2001). Mechanisms of synesthesia: Cognitive and physiological constraints. *Trends in Cognitive Sciences*, 5, 36-41.

Mattingly, Rich, Yelland, & Bradshaw. (2001). Unconscious binding of colour and alphanumeric form in synaesthesia. *Nature*, 410, 580-582.

Smilek, Dixon, Cudahy, & Merikle (2002). Synaesthetic color experiences influence memory. *Psychological Science*, 13, 548-556.

Week 7, October 16th: Split-brains

Gazzaniga, M.S. (2000). Cerebral specialization and interhemispheric communication: Does the corpus callosum enable the human condition? *Brain* 123, 1293-1326.

Kingstone, A. & Gazzaniga, M.S. (1995). Subcortical transfer of higher-order information: More illusory than real? *Neuropsychology*, 9, 321-328.

Turk, D.J., Heatherton, T.F., Macrae, C.N., Kelley, W.M., & Gazzaniga, M.S. (2003). Out of contact, out of mind: The distributed nature of self. *Annals of the New York Academy of Sciences*, 1001, 1-14.

*****Critique Paper #1 Due*****

Wolford G, Miller M B, Gazzaniga M. (2000). The left hemisphere's role in hypothesis formation. Journal of Neuroscience 20, 1 – 4.

Week 8, October 23rd: Face processing
Taught with Kirsten

Ellis, H. D., Young, A. W., Quayle, A. H., & De Pauw, K. W. (1997) Reduced autonomic responses to faces in Capgras delusion. *Proceedings of the Royal Society. B, Biological sciences*, 264, 1085-1092.

Haxby, J., Hoffman, E., & Gobbini, M. (2000). The distributed human neural system for face perception. *Trends in Cognitive Sciences*, 4, 223-233.

Rossion, B., Caldara, R., Seghier, M., Schuller, A., Lazeyras, F., & Mayer, E. (2003). A network of occipito-temporal face-sensitive areas besides the right middle fusiform gyrus is necessary for normal face processing. *Brain*, 126, 2381-2395.

Hirstein, W., & Ramachandran, V. S. (1997) Capgras syndrome: a novel probe for understanding the neural representation of the identity and familiarity of persons. *Proceedings of the Royal Society. B, Biological sciences*, 264, 437-44

Week 9, October 30th: Simultanagnosia
Taught by Kirsten

Clavagnier, S., Fruhmann Berger, M., Klockgether, T., Moskau, S., & Karnath, H.-O. (2006). Restricted ocular exploration does not seem to explain simultanagnosia. *Neuropsychologia*, 44, 2330-2336.

Karnath, H.-O., Ferber, S., Rorden, C., & Driver, J. (2000). The fate of global information in dorsal simultanagnosia. *Neurocase*, 6, 295-306.

Rafal, R. (2003). Balint's syndrome: A disorder of visual cognition. In M. D'Esposito (Ed.), *Neurological foundations of cognitive neuroscience* (pp. 27-40). Cambridge, MA: MIT Press. * This reading will be provided for you.

Shalev, L., Mevorach, C., & Humphreys, G. (2007). Local capture in balint's syndrome: Effects of grouping and item familiarity. *Cognitive Neuropsychology*, 24(1), 115-127.

Week 10, November 6th: Social attention

Deaner, R. O. & Platt, M. L. (2003) Reflexive social attention in monkeys and humans. *Current Biology*, 13, 1609-1613.

Macrae, C.N., Hood, B.M., Milne, A.B., Rowe, A.C., & Mason, M.F. (2002). Are you looking at me? Eye gaze and person perception. *Psychological Science*, 13, 460-464.

Richeson, J.A., Baird, A.A., Gordon, H.L., Heatherton, T.F., Wyland, C.L., Trawalter, S., & Shelton, J.N. (2003). An fMRI examination of the impact of interracial contact on executive function. *Nature Neuroscience*, 6, 1323-1328.

Ristic, J., Friesen, C. K., & Kingstone, A. (2002). Are eyes special? It depends on how you look at it. *Psychonomic Bulletin and Review*, 9, 507-513.

Shepherd, S.V., Deaner, R. O. & Platt, M. L. Social status gates social attention in monkeys, *Current Biology*, 16, R119-R120.

Week 11, November 13th: EXAM

Week 12, November 20th: Research thoughts

Cacioppo, J. T. et al (2003). Just because you're imaging the brain doesn't mean you can stop using your head: A primer and set of first principles. *Journal of Personality and Social Psychology*, 85, 650-661.

Kingstone, A., Smilek, D., Ristic, J., Friesen, C. K., & Eastwood, J. D. (2003). Attention, researchers! It is time to look at the real world. *Current Directions in Psychological Science*, 12, 176-184.

Kosslyn, S. M. (1999). If neuroimaging is the answer, what is the question? *Philosophical Transactions of the Royal Society of London, Series B*, 354, 1283-1294.

Miller, G. A. & Keller, J. (2000). Psychology and neuroscience: Making peace. *Current Directions in Psychological Science*, 9, 212-215.

Week 13, November, 27th: Class assigned topic

Critique Paper #2 Due

Mason, M.F., Tatkov, L.P., & Macrae, C.N. (2005). The look of love: Gaze shifts and person perception. Psychological Science, 16, 236-239.