

Cognition and Autism (PSY 407/507)

University of Oregon

Winter 2011

Mondays 1:00 – 2:50; 143 Straub

3-4 credits; CRN: 26901 (PSY407), 26902 (PSY507)

Prerequisites: Instructor's consent

Instructor: Dr. Paul Dassonville

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Office hours: Wed 9:30 – 11:00 & Fri 1:00 – 2:30

in the Dept. Head's Office

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Tue 1:30-3:30 and by appt.

General Course Description: This seminar will explore how cognitive processes and judgments are affected by autism and related disorders. Because of the instructors' own research programs, particular emphasis will be placed on how visual perception and social cognition are affected. The course will consider "autistic thinking" along the full spectrum, including substantial attention to variations in autistic traits among people who fall well below a clinical diagnosis.

The course readings will draw from a wide range of methodologies from a variety of subfields within psychology. A sampling of topics to be covered includes: autistic traits and illusion susceptibility; autistic traits and interpersonal sensitivity; comparison of social cognitive deficits in schizophrenia and autism; oxytocin and autism; and how cross-cultural research suggests some cultures see the world more "autistically" than others. A healthy portion of the seminar time will be reserved for in-depth exploration of specific topics in which seminar participants have expressed an interest.

Required Readings: Readings are theoretical and empirical articles from peer-reviewed psychology journals and chapters from books. There is no text book for the course. Readings will be available electronically on Blackboard (<http://blackboard.uoregon.edu/>). If you have problems downloading the papers, please let the instructors know as soon as possible. Class time will consist of lecture and discussion of the readings – all students should complete the readings before each class period.

Course Requirements

Participation (grads and undergrads): Much of the educational value of this course will come from class discussions. We expect your active participation in these discussions, and this will require that you have read and thought about the course readings prior to each class meeting. One unexcused absence is allowable with no penalty. Additional absences can count against your participation grade. It is in your best interest to discuss any absences that you know of in advance with the instructors.

Reading responses (grads and undergrads): Each week, you will be required to write two or more short reaction points (each a paragraph in length) in response to that week's readings. These should serve to foster discussion in the seminar – further questions that the readings have

brought to mind, new ideas provoked by the readings, insights for ways to tie together disparate findings, etc. Responses should be posted to the Blackboard Discussion site before 5 pm on the Sunday before each class period, so that they can be considered by the instructors, the discussion leader, and other students before class.

Discussion leader (grads only): Prepare a presentation (using PowerPoint or Keynote) for the week you are leading discussion. Provide an introductory background for the assigned topic – this might incorporate information from other papers to define or illustrate key concepts related to the assigned papers. Briefly summarize the methods and findings for the papers in your week (you don't necessarily need to discuss each paper in sequence; e.g., shared methodology across one or more papers might be described together). Prepare observations, integrations, and questions about the readings that can be used to fuel discussion.

Hot Topic report (grads and undergrads): Each student will present a 10-minute report on a “hot topic” related to the course. It should be something that interests you and may reflect your own expertise (the topic should be related to the course, but it doesn't have to be something already listed among the readings for the course). Imagine you are preparing your report for a science program aimed for educated adults, so you will need to explain concepts and terms that might not be familiar. Your report may be centered around the results from a particular new study, for which you will need to provide context (why are the findings in this study so “hot”? what are the implications of these findings?) or you may present a phenomenon that has been identified in more than one study, also explaining why the topic is “hot” and its implications. Presentations should be 10 minutes in duration, with 5 additional minutes for questions and discussion. Please send an email to both of us (prd@uoregon.edu and sdhodes@uoregon.edu) no later than the day of the second class meeting (Jan 10) telling us what you plan to do for your hot topic. We recommend talking to one or both of us if you would like some help coming up with a hot topic.

Term paper (grads and undergrads taking the course for 4 credits): Your paper should be in the form of a study proposal that is directly related to topics in the seminar. The proposed study should be about 8-10 pages of text (double spaced, 1” margins, 12 point font), not including references or cover page. The theoretical background for the study should come from both readings covered in the course and readings you do on your own for the proposal. Your proposal should be technically feasible, and one that you would be excited to run. Ideally, the ideas developed in these proposals could be tested at some point in the future. **A 1-2 page paper plan, describing the topic of your study proposal, will be due Feb. 21; the final proposal will be due Mar. 14.** We encourage you to talk to us about your paper topic at any point during the term if you would like guidance or help.

Grading: Grading will be based on the combined scores from the reading responses/class participation, leading discussion, Hot Topic presentation, and term paper:

Assignment	Grads 3 credits	Grads 4 credits	Undergrads 3 credits	Undergrads 4 credits
Reading responses/participation	65%	50%	75%	55%
Leading discussion	20%	15%		
Hot topic presentation	15%	10%	25%	20%
Term paper		25%		25%

Changes/Plagues/Weather: Topics, readings, or grading criteria may be changed at the instructors' discretion. Changes will be announced in class, over email, or on Blackboard. If necessary, accommodations in response to inclement weather, swine flu, or other pestilence will be decided by the instructors in accordance with university guidelines and will be communicated to students via email and/or Blackboard.

Academic Learning Services: If you have difficulty with the readings at any time, you are encouraged to contact the instructors so that we can provide timely assistance.

Students with Disabilities: If you have a documented disability and anticipate needing accommodations in this course, please make arrangements to meet with the instructor as soon as possible. Also, please request that the Counselor for Students with Disabilities (Hillary Gerdes, hgerdes@oregon.uoregon.edu, tel. 346-3211, TTY 346-1083) send a letter verifying your disability. For a list of resources provided by the Office of Disability Services, please see <http://ds.uoregon.edu>.

Students for whom English is a Second Language: If you are a non-native English speaker and think you may have trouble in this course due to language difficulties, please see the instructor as soon as possible to make any necessary special arrangements.

Academic Honesty: All work submitted in this course must be your own. For the consequences of academic dishonesty, refer to the Schedule of Classes published quarterly. Violations will be taken seriously and are noted on student disciplinary records. If you are in doubt regarding any aspect of these issues as they pertain to this course, please consult with the instructor before you complete any relevant requirements of the course. (For more information, see the UO web site regarding academic honesty at: <http://studentlife.uoregon.edu/StudentConductandCommunityStandards/ResourcesforStudents/tabid/71/Default.aspx>).

Course Outline: The schedule of topics and readings below is subject to change and may be revised as the quarter progresses. The official updated version of the outline will reside on the Blackboard web site. Updated print versions can also be obtained from the instructors or teaching assistant during normal office hours.

Week	Date	Topic	Discussion Leader
1	Jan. 3	Introduction (prd & sdh)	Dassonville/Hodges
2	Jan. 10	Extreme Male Brain Theory (prd)	
3	Jan. 17	MLK, Jr. Birthday – NO CLASS	
4	Jan. 24	Spatial Vision (prd)	
5	Jan. 31	Savants (prd)	
6	Feb. 7	Emotion Recognition & Faces (prd)	
7	Feb. 14	Connections between Self and Other (sdh)	
8	Feb. 21	Interpersonal Sensitivity; Oxytocin (sdh)	
9	Feb. 28	Schizophrenia & Autism (sdh)	
10	Mar. 7	Culture and Autistic Thinking (aka “Western Male Syndrome?”) (sdh)	

Reading List

Week 2: Extreme Male Brain Theory

- Auyeung et al. (2009). Fetal testosterone and autistic traits. *British Journal of Psychology*, 100 (Pt 1), 1-22.
- Barbeau et al. (2009). Are autistic traits autistic? *British Journal of Psychology*, 100 (Pt 1), 23-28.
- Baron-Cohen et al. (2003). The systemizing quotient: An investigation of adults with Asperger syndrome or high-functioning autism, and normal sex differences. *Philosophical Transactions of the Royal Society of London Series B, Biological Sciences*, 358, 361-374.
- Baron-Cohen et al. (2005). Sex differences in the brain: Implications for explaining autism. *Science*, 310, 819-23.
- Billington et al. (2007). Cognitive style predicts entry into physical sciences and humanities: Questionnaire and performance tests of empathy and systemizing. *Learning and Individual Differences*, 17, 260-268.

Week 4: Spatial Vision

- Dakin & Frith (2005). Vagaries of visual perception in autism. *Neuron*, 48, 497-507.
- Dawson et al. (2007). The level and nature of autistic intelligence. *Psychological Science*, 18, 657-662.
- Jolliffe & Baron-Cohen (1997). Are people with autism and Asperger syndrome faster than normal on the Embedded Figures Test? *Journal of Child Psychology and Psychiatry*, 38, 527-534.
- Stewart et al. (2009). Autistic traits predict performance on the block design. *Autism*, 13, 133-142.
- Walter et al. (2009). A specific autistic trait that modulates visuospatial illusion susceptibility. *Journal of Autism and Developmental Disorders*, 39, 339-49.

Week 5: Savants

- Casanova et al. (2007). Comparative minicolumnar morphometry of three distinguished scientists. *Autism*, 11, 557-569.
- Drake & Winner (online preprint). Realistic drawing talent in typical adults is associated with the same kind of local processing bias found in individuals with ASD. *Journal of Autism and Developmental Disorders*.
- Heaton & Wallace (2004). Annotation: The savant syndrome. *Journal of Child Psychology and Psychiatry, and Allied Disciplines*, 45, 899-911.
- Snyder et al. (2006). Savant-like numerosity skills revealed in normal people by magnetic pulses. *Perception*, 35, 837-845.
- Thioux et al. (2006). The day of the week when you were born in 700 ms: Calendar computation in an Autistic savant. *Journal of Experimental Psychology: Human Perception and Performance*, 32, 1155-68.

Week 6: Emotion Recognition & Faces

- Adolphs et al. (2008). Distinct face-processing strategies in parents of autistic children. *Current Biology*, 18, 1090-1093.

- Dalton et al. (2005). Gaze fixation and the neural circuitry of face processing in autism. *Nature Neuroscience*, 8, 519-526.
- Deruelle et al. (2008). Attention to low-and high-spatial frequencies in categorizing facial identities, emotions and gender in children with autism. *Brain and Cognition*, 66, 115-123.
- Jemel et al. (2006). Impaired face processing in autism: Fact or artifact? *Journal of Autism and Developmental Disorders*, 36, 91-106.
- Penton-Voak et al. (2007). Performance on a face perception task is associated with empathy quotient scores, but not systemizing scores or participant sex. *Personality and Individual Differences*, 43, 2229-2236.

Week 7: Connections Between Self and Other

- Baron-Cohen, S., Golan, O., Ashwin, E., Ashwin, E., & Robertson, M. (1997). Another advanced test of theory of mind: Evidence from very high functioning adults with autism or Asperger Syndrome. *Journal of Child Psychology and Psychiatry*, 38, 813-822.
- Blair, R. J. R. (1999). Psychophysiological responsiveness to the distress of others in children with autism. *Personality and Individual Differences*, 26, 477-485.
- Dapretto, M., Davies, M. S., Pfeifer, J. H., Scott, A. A., Sigman, M., Bookheimer, S. Y., & Iacoboni, M. (2006). Understanding emotions in others: Mirror neuron dysfunction in children with autism spectrum disorders. *Nature Neuroscience*, 9, 28-30.
- Montgomery, K. J., Seeherman, K. R., & Haxby, J.V. (2009). The well-tempered social brain. *Psychological Science*, 20, 1211-1213.
- Spek, A. A., Scholte, E. M., & Van Berckelaer-Onnes, I. A. (2010). Theory of mind in adults with HFA and Asperger syndrome. *Journal of Autism and Developmental Disorders*, 40, 280-289.

Week 8: Interpersonal Sensitivity; Oxytocin

- Andari, E., Duhamel, J.-R., Zalla, T., Herbrecht, E., Leboyer, M., & Sirigu, A. (2010). Promoting social behavior with oxytocin in high-functioning autism spectrum disorders. *PNAS Proceedings of the National Academy of Sciences of the United States of America*, 107, 4389-4394.
- Bartz, J. A., Zaki, J., Bolger, N., Hollander, E., Ludwig, N. N., Kolevzon, A., & Ochsner, K. N. (2010). Oxytocin selectively improves empathic accuracy. *Psychological Science*, 21, 1426-1428.
- Demurie, E., DeCorel, M., & Roeyers, H. (2011). Empathic accuracy in adolescents with autism spectrum disorders and adolescents with attention-deficit/hyperactivity disorder. *Research in Autism Spectrum Disorders*, 5, 126-134.
- Domes, G., Heinrichs, M., Michel, A., Berger, C., Herpertz, S. (2007). Oxytocin improves “mind-reading” in humans. *Biological Psychiatry*, 61, 731-733.
- Jobe, L. E., & Williams White, S. (2007). Loneliness, social relationships, and a broader autism phenotype in college students. *Personality and Individual Differences*, 42, 1479-1489.
- Ponnet, K., Buysse, A., Roeyers, H., & De Clercq, A. (2008). Mind-reading in young adults with ASD: Does structure matter? *Journal of Autism and Developmental Disorders*, 38, 905-918.

Week 9: Schizophrenia & Autism

- Claridge, G., & McDonald, A. (2009). An investigation into the relationship between convergent and divergent thinking, schizotypy, and autistic traits. *Personality and Individual Differences*, 46, 294-799.
- Green, M. J., Waldron, J. H., & Coltheart, M. (2007). Emotional context processing is impaired in schizophrenia. *Cognitive Neuropsychiatry*, 12, 259-280.
- Langdon, R. (2005). Theory of mind in schizophrenia. In B. F. Malle & S. D. Hodges (Eds.), *Other minds: How humans bridge the divide between self and others* (pp. 323-342). New York, NY: Guilford Press.
- Monkul, E. S., Green, M. J., Barrett, J. A., Robinson, J. L., Velligan, D. I., & Glahn, D. C. (2007). A social cognitive approach to emotional intensity judgment deficits in schizophrenia. *Schizophrenia Research*, 94, 245-252.
- Spek, A. A., & Wouters, S. G. M. (2010). Autism and schizophrenia in high functioning adults: Behavioral differences and overlap. *Research in Autism Spectrum Disorders*, 4, 709-717.

Week 10: Culture and Autistic Thinking (aka “Western Male Syndrome?”)

- Grossman, J. B., Klin, A., Carter, A. S., & Volkmar, F. R. (2000). Verbal bias in recognition of facial emotions in children with Asperger Syndrome. *Journal of Child Psychology and Psychiatry*, 41, 369-379.
- Hedden, T., Ketay, S., Aron, A., Markus, H. R., & Gabrieli, J. D. E. (2008). Cultural influences on neural substrates of attentional control. *Psychological Science*, 19, 12-17.
- Ishii, K., Reyes, J. A., & Kitayama, S. (2003). Spontaneous attention to word content versus emotional tone: Differences among three cultures. *Psychological Science*, 14, 39-46.
- Kitayama, S., Duffy, S., Kawamura, T., & Larsen, J. T. (2003). Perceiving an object and its context in different cultures: A cultural look at New Look. *Psychological Science*, 14, 201-206.
- Wakabayashi, A., Baron-Cohen, S., Uchiyama, T., Yoshida, Y., Kuroda, M., & Wheelwright, S. (2007). Empathizing and systemizing in adults with and without autism spectrum conditions: Cross-cultural stability. *Journal of Autism and Developmental Disorders*, 37, 1823-1932.