

**Core Seminar in Perceptual Cognition
Psychology 505
Emory University
Fall 2003**

Time and Location

Wednesday 9:00-11:50 AM
Psychology 322

Instructors

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Overview

This course is required of all graduate students in the Cognition and Development Program. Students from other psychology programs, from other Emory departments, and from other Atlanta universities are welcome as well. The course begins with a series of six lectures (one a week) on classic and still current controversies in human perceptual cognition and its development. For the final seven meetings of the course, students will organize collective presentations that bring empirical evidence to bear on contrasting positions associated with these controversies. The topic of these seven meetings will be determined during the first half of the course, within the constraints of the general topics assigned. The student groups that present these issues (e.g., 2-3 students per group) will also be established during the first half of the course. Over the course as a whole, important issues, theories, findings, and methods will be addressed, using exemplary research to illustrate and explore them. Additionally, each topic will be addressed from multiple perspectives, to the extent that work reflecting multiple perspectives exists. The perspectives most likely to be addressed include cognitive psychology, developmental psychology, cognitive neuroscience, and computational modeling.

Readings will often be primary sources that cover theory, findings, and methods on the topics of interest, along with reviews that cover large sets of findings. In addition, background texts on cognition, development, cognitive neuroscience, and computational modeling will be recommended for interested students. These texts will not be covered during the course, nor will they be required reading. Instead, they serve as tutorial material as needed for students who lack strong background; they will also serve as reference sources for more experienced students who want to increase their background knowledge of specific topics.

Assignments and Evaluation

Each student will perform a series of assignments related to a project that will be the basis of evaluation. The series of assignments and their due dates are as follows:

1. On the first day of class, Sept. 3, students will turn in a ranked list of preferences for the 7 topics to be covered during the second half of the course. By the end of the week, the instructors will circulate the assignments of students to topics. The instructors will do their best to provide students with one of their top choices.

2. No later than Monday, Sept. 29, students must turn in a proposal for the topic that they will present. This proposal should be worked on with the other students also presenting the topic, such that the presentation and readings are coordinated. However, each student will ultimately be responsible for his/her own paper related to the presentation. Thus, the proposal should also give a sense of the unique perspective that each student will take in his/her paper. The proposal (approximately 5 pages) should include: (a) a description of the tentative topic (also why the topic is important; why it lends itself to illuminating the issues covered in the first six lectures; etc.); (b) a list of tentative readings (also what will be presented for the readings in class; how they will be informative and stimulate discussion; etc.); (c) a brief description of the specific approach to the topic that the student will take. Parts (a) and (b) should be the same for everyone working in a group. Part (c) should be unique for each individual.

3. By Oct. 1, the instructors will provide feedback on the proposals. Students should turn in their revised versions of the proposal a week later (by October 8) for final approval by October 10.

4. Students preparing for the Oct. 15, 22, and 29 meetings must finalize their readings by Sept. 24, Oct. 1, and 8, respectively, given that it takes two weeks to put papers on reserve, and they need be available one week before class. Except for the Sept. 24 deadline, the instructors will put the papers on reserve after receiving references from students. For the Sept. 24 deadline, a student will have to put these papers on reserve (instructions to be provided later).

5. One week after presenting the topic in class, each student must turn in a draft of his/her individual paper on the topic. The paper must be 10-20 pages in APA style, 12 point Times Roman font, double-spaced, 1 inch margins. References, tables, and figures should be counted as extra pages. Students may turn in drafts earlier if they like. Students presenting their topics on Nov. 20 and Dec. 3 must turn in their drafts by Nov. 27.

6. One week after receiving a draft, the instructors will return it with feedback.

7. All final versions of the paper are due by December 10, along with the student's journal.

Evaluation will be based on all aspects of this process, including the proposals, presentation, paper, and quality of revision.

Students taking the course pass-fail must perform all aspects of the project except writing the paper. These students must attend course meetings regularly and perform all the readings. All students will be evaluated on their readings of the papers as well, and also on their journals.

Journal

All students, including those taking the course pass-fail, are required to keep a course journal. The journal should include the following materials:

- (1) Notes taken on the readings in preparation for the class discussion.
- (2) Answers to the questions provided by the instructors prior to each meeting.
- (3) Notes taken during class.
- (4) Notes used for presented papers.
- (5) Any other notes that the student has made associated with the course.

The journal serves two purposes. The primary purpose is to organize the student's course materials in a way that will be useful for future reference. The secondary purpose is to allow the instructors to evaluate the student's involvement in the course, as indicated by course notes. The journal will also be used in course evaluation.

Background Texts

The following texts are not required reading. However, they may be used as reference sources as students deem necessary. Specifically, these texts provide tutorials for students who lack strong background; they also serve as reference sources for more advanced students who want to increase their knowledge of specific topics. Some of these texts are available at the University bookstore.

Text on Cognition

Medin, D.L., Ross, B.H., & Markman, A.B. (2000). *Cognitive psychology* (3rd ed.). New York: John Wiley & Sons.

Texts on Development

Bremner, J.G. (1994). *Infancy* (2nd ed.). Cambridge, MA: Blackwell.

Flavell, J.H., Miller, P.H., & Miller, S.A. (1993). *Cognitive development* (3rd ed.). Englewood Cliffs, NJ: Prentice Hall.

Kellman, P. & Arterberry, M.E. (1998). *The cradle of knowledge: Development of perception in infancy*. Cambridge: M.I.T. Press.

Rochat, P. (2001). *The infant's world*. Cambridge: Harvard University Press

Text on Cognitive Neuroscience

Gazzaniga, M.S., Ivry, R.B., & Mangun, G.R. (2002). *Cognitive neuroscience: The biology of the mind* (2nd ed.). New York: Norton.

Johnson, M. (1997). *Developmental cognitive neuroscience: An Introduction (Fundamentals of Cognitive Neuroscience)*. Oxford, U.K.:Blackwell Publishers.

Texts on Computational Modeling

Anderson, J.A. (1995). *An introduction to neural networks*. Cambridge, MA: MIT Press. [a more advanced text]

Bechtel, W., & Abrahamsen, A. (2001). *Connectionism and the Mind: Parallel Processing, Dynamics, and Evolution in Networks* (2nd ed.). Cambridge, MA: Basil Blackwell. [an elementary text]

Elman, J. L., Bates, E. A., Johnson, M. H., Karmiloff-Smith, A., Parisi, D., & Plunkett, K. (1996). *Rethinking innateness: A connectionist perspective on development*. Cambridge, MA, USA: MIT Press. [relatively introductory]

O'Reilly, R.C. & Munakata, Y. (2000). *Computational explorations in cognitive neuroscience*. Cambridge, MA: MIT Press. [a more advanced text]

Course Schedule

Date and Topics

Presentations of core issues (Rochat and Barsalou)

Sept. 3 Course introduction: Mapping cognitive and developmental psychology
Levels of explanation in theorizing about cognition and development.

Sept. 10 Constructivist vs. ecological approaches

Sept. 17 Nativism and domains vs. learning and plasticity

Sept. 29 Modularity vs. interaction (Monday 6:00 PM)

Oct. 1 Relations between modality-specific systems and higher cognition

Oct. 8 Perception and action in situated cognition

Student group presentations on specific topics

Oct. 15 Learning in perception

Oct. 22 Mental imagery

Oct. 29 Memory

Nov. 6 Knowledge (concepts and categories)

Nov. 13 Language

Nov. 20 Thought

Dec. 3 Social cognition

Required Readings for Core Issue Meetings

Date and Topics. Required reading [assigned pages]

Sept. 3 Course introduction: Mapping cognitive and developmental psychology
Levels of explanation in theorizing about cognition and development.

Sept. 10 Constructivist vs. ecological approaches

Gibson, J.J. (1979) *The ecological approach to visual perception*. Boston: Houghton-Mifflin. [Chapter 9, pp. 147-169]. [read pages 147-150, 156-169]

Piaget, J. (1969). *The mechanisms of perception*, N.Y. Routledge & Kegan Paul. [read introduction pp. XV-XXIX]

Bruner, J.S. (1973). On perceptual readiness. In J.S. Bruner, *Beyond the information given* (pp. 7-42). New York: Norton.]. [read pages 7-14]

Bruner, J.S. (1973). Going beyond the information given. In J.S. Bruner, *Beyond the information given* (pp. 218-238). New York: Norton.]. [read pages 218-222]

Bruner, J.S. (1973). Value and need as organizing factors in perception. In J.S. Bruner, *Beyond the information given* (pp. 43-56). New York: Norton.]. [read pages 47-54]

Sept. 17 Nativism and domains vs. learning and plasticity

A. Karmiloff-Smith (1992). *Beyond modularity*. Cambridge, MA: MIT Press. [read Ch. 1, Taking development seriously, pp. 1-30]

Spelke, E.S. & Elissa L. Newport (1998). Nativism, empiricism, and the development of knowledge. In W. Damon & R.M. Lerner (Eds.) *Handbook of Child Psychology, Vol. 1, Theoretical models of human development* (pp. 276-298). New York : John Wiley & Sons. [read all]

Elman, J.L., Bates, E.A., Johnson, M.H., Karmiloff-Smith, A., Parisi, D., & Plunkett, K. (1996). *Rethinking innateness: A connectionist perspective on development*. Cambridge, MA: MIT Press. [read Ch. 1., New perspectives on development, pp. 1-46]

Sept. 29 Modularity vs. interaction (Monday 6:00 PM)

Fodor, J.A. (1983). Modularity of mind. Cambridge, MA: MIT Press. (read and skim pp. 38-73)

McClelland, J.L., & Rumelhart, D.E. (1981). An interactive activation model of context effects in letter perception: Part 1. An account of basic findings. *Psychological Review*, 88, 375-407. [read pages 375-378]

Tanenhaus, M.K., Spivey-Knowlton, M.J., Eberhard, K.M. & Sedivy, J.E. (1995). Integration of visual and linguistic information in spoken language comprehension. *Science*, 268, 1632-1634. [read all]

Crist, R.E., Li, W., & Gilbert C.D. (2001). Learning to see: experience and attention in primary visual cortex. *Nature Neuroscience*, 4, 519-25. [read all]

Oct. 1 Relations between modality-specific systems and higher cognition

Smith, L., & Gasser, M. (2003). The development of embodied cognition: Six lessons from babies. Manuscript under review.

Barsalou, L.W. (1999). Perceptual symbol systems. *Behavioral and Brain Sciences*, 22, 577-609. [read pages 577-603]

Oct. 8 Perception and action in situated cognition

Clark, A. (1997). *Being there: Putting brain, body, and world together again*. Cambridge, MA: MIT Press. [read intro and Ch. 1, pp. 1-33]

- Thelen, E., & Smith, L. (1994). *A dynamic systems approach to the development of cognition and action*. Cambridge, MA: MIT Press. [read Chapter 2, The crisis in cognitive development, p. 21-44]
- Neisser, U. (1995). Criteria for an ecological self. In P. Rochat (Ed.) *The self in infancy: Theory and research* (pp. 17-34). Amsterdam: North-Holland/Elsevier. [read all]

Examples of Readings for Topical Meetings

Date and Topics. Reading

Oct. 15 Examples of Readings for Learning in perception

- Gibson, E.J. (1982). The concept of affordances in development: the renaissance of functionalism. In Collins (Ed.), *The concept of development. The Minnesota Symposium on Child Psychology* (Vol. 15, pp. 55-81). Mahwah, NJ: Erlbaum.
- Gibson, E.J. (1991). *An Odyssey in Learning and Perception*. Cambridge: M.I.T. Press.
- Goldstone, R. (1994). Influences of categorization on perceptual discrimination. *Journal of Experimental Psychology: General*, 123, 178-200.
- McGurk, H., & MacDonald, J. (1976). Hearing lips and seeing voices. *Nature*, 264, 746-748.
- Peterson, M. A., & Gibson, B. S. (1994). Must figure-ground organization precede object recognition? *Psychological Science*, 5, 253-259.
- Peterson, M. A., & Gibson, B. S. (1994). Must figure-ground organization precede object recognition? *Psychological Science*, 5, 253-259.
- Gibson, J.J. (1955). Perceptual learning: differentiation or enrichment? *Psychological Review*, 62, 32-41.
- Ramachandran, V.S., & Hirstein, W. (1998). The perception of phantom limbs: The D.O. Hebb lecture. *Brain*, 121, 1603-1630.
- Schyns, P.G., Goldstone, R.L., & Thibaut, J.P. (1998). The development of features in object concepts. *Behavioral and Brain Sciences*, 21, 1-54.
- Shiffrar, M., & Freyd, J.J. (1990). Apparent motion of the human body. *Psychological Science*, 4, 257-264.
- Stevens, J.A., Fonlupt, P., Shiffrar, M., & Decety, J. (2000). New aspects of motion perception: Selective neural encoding of apparent human movements. *NeuroReport*, 11, 109-115.
- Warren, R.M. (1970). Restoration of missing speech sounds. *Science*, 167, 392-393.
- Werker, J.F. (1995). Exploring developmental changes in cross-language speech perception. In D. Osherson, (Ed.). *An invitation to cognitive science. Language* (pp. 87-107). Cambridge, MA: MIT Press. [read pages 87-94]

Oct. 22 Examples of Readings for Mental imagery

- Cave, K.R., Pinker, S., Giorgi, L., Thomas, C.E., Heller, L.M., Wolfe, J.M., & Lin, H. (1994). The representation of location in visual images. *Cognitive Psychology*, 26, 1-32.
- Chambers, D., & Reisberg, D. (1992). What an image depicts depends on what an image means. *Cognitive Psychology*, 24, 145-174.
- Craver-Lemley, C., & Reeves, A. (1997). Effects of imagery on vernier acuity under conditions of induced depth. *Journal of Experimental Psychology: Human Perception and Performance*, 23, 3-13.
- Farah, M.J. (2000). The neural bases of mental imagery. In M.S. Gazzaniga (Ed), *The cognitive neurosciences* (2nd ed., 965-974). Cambridge, MA: MIT Press.
- Finke, R.A. (1989). *Principles of mental imagery*. Cambridge, MA: MIT Press. (Chapter 1 and 2, pp. 1-58)

- Gilden, D., Blake, R., & Hurst, G. (1995). Neural adaptation of imaginary visual motion. *Cognitive Psychology*, 28, 1-16.
- Grèzes, J., & Decety, J. (2001). Functional anatomy of execution, mental simulation, observation, and verb generation of actions: A meta-analysis. *Human Brain Mapping*, 12, 1-19.
- Hespos, S., & Rochat, P. (1997). Dynamic mental representation in infancy. *Cognition*, 64, 153-188.
- Jeannerod, M. (1995). Mental imagery in the motor context. *Neuropsychologia*, 33, 1419-1432.
- Kosslyn, S.M., Thompson, W.L., Kim, I.J., & Alpert, N.M. (1995). Topographical representations of mental images in primary visual cortex. *Nature*, 378, 496-498.
- Parsons, L.M. (1987a). Imagined spatial transformations of one's body. *Journal of Experimental Psychology: General*, 116, 172-191.
- Parsons, L.M. (1987b). Imagined spatial transformations of one's hands and feet. *Cognitive Psychology*, 19, 178-241.
- Piaget, J. (1956). *The child's conception of space*. London: Routledge and Kegan-Paul. (Chap. 13, Systems of reference and horizontal-vertical coordinates, pp. 375-418)
- Reed, C.L., & Vinson, N.G. (1996). Conceptual effects on representational momentum. *Journal of Experimental Psychology: Human Perception and Performance*, 22, 839-850.
- Schwartz, D.L., & Black, J.B. (1996). Analog imagery in mental model reasoning: Depictive models. *Cognitive Psychology*, 30, 154-219
- Schwartz, D.L., & Black, J.B. (1996). Analog imagery in mental model reasoning: Depictive models. *Cognitive Psychology*, 30, 111-153.
- Zatorre, R.J., Halpern, A.R., Perry, D.W., Meyer, E., & Evans, A.C. (1996). Hearing in the mind's ear: A PET investigation of musical imagery and perception. *Journal of Cognitive Neuroscience*, 8, 29-46.

Oct. 29 Examples of Readings for Memory

- Drummey, A.B., & Newcombe, N. (1995). Remembering versus knowing the past: Children's explicit and implicit memories for pictures. *Journal of Experimental Child Psychology*, 59, 549-565.
- Glenberg, A.M. (1997). What memory is for. *Behavioral and Brain Sciences*, 20, 1-55.
- Glenberg, A.M., Schroeder, J.L., & Robertson, D. A. (1998). Averting the gaze disengages the environment and facilitates remembering. *Memory & Cognition*, 26, 651-658.
- Intraub, H., Gottesman, C.V., & Bills, A.J. (1998). Effects of perceiving and imagining scenes on memory for pictures. *Journal of Experimental Psychology: Learning, Memory, & Cognition*, 24, 186-201.
- Marlier, L., Schaal, B., & Soussignan, R. (1998). Neonatal responsiveness to the odor of amniotic and lacteal fluids: A test of perinatal chemosensory continuity. *Child Development*, 69(3), 611-623.
- Martin, M., & Jones, G.V. (1998). Generalizing everyday memory: Signs and handedness. *Memory & Cognition*, 26, 193-200.
- Nygaard, L.C., Sommers, M.S., & Pisoni, D.B. (1994). Speech perception as a talker-contingent process. *Psychological Science*, 5, 42-46.
- Schooler, J.W., & Engstler-Schooler, T.Y. (1990). Verbal overshadowing of verbal memories: Some things are better left unsaid. *Cognitive Psychology*, 17, 36-71.
- Schooler, J.W., Fiore, S.M., & Brandimonte, M.A. (1997). At loss from words: Verbal overshadowing of perceptual memories. *The Psychology of Learning and Motivation*, 37, 291-340.

Nov. 6 Examples of Readings for Examples of Readings for Knowledge (concepts and categories)

- Barsalou, L.W. (2003). Abstraction in perceptual symbol systems. *Philosophical Transactions of the Royal Society of London: Biological Sciences*, 358, 1177-1187.
- Barsalou, L.W. (2003). Situated simulation in the human conceptual system. *Language and Cognitive Processes*.

- Barsalou, L.W., Solomon, K.O., & Wu, L.L. (1999). Perceptual simulation in conceptual tasks. In M.K. Hiraga, C. Sinha, & S. Wilcox (Eds.), *Cultural, typological, and psychological perspectives in cognitive linguistics: The proceedings of the 4th conference of the International Cognitive Linguistics Association, Vol. 3* (209-228). Amsterdam: John Benjamins.
- Cree, G. S., & McRae, K. (2003). Analyzing the factors underlying the structure and computation of the meaning of chipmunk, cherry, chisel, cheese, and cello (and many other such concrete nouns). *Journal of Experimental Psychology: General*, *132*, 163-201.
- Eimas, P. D., & Quinn, P. C. (1994). Studies on the formation of perceptually based basic-level categories in young infants. *Child Development*, *65*, 903-917.
- Gainotti, G., Silveri, M.C., Daniele, A., & Giustolisi, L. (1995). Neuroanatomical correlates of category-specific semantic disorders: A critical survey. *Memory*, *3*, 247-264.
- Klatzky, R.L., Pelligrino, J.W., McCloskey, B.P., & Doherty, S. (1989). The role of motor representations in semantic sensibility judgments. *Journal of Memory and Language*, *28*, 56-77.
- Martin, A. (2001). Functional neuroimaging of semantic memory. In R. Cabeza & A. Kingstone (Eds.), *Handbook of functional neuroimaging of cognition* (pp. 153-186). Cambridge, MA: MIT Press.
- Martin, A., Haxby, J.V., Lalonde, F.M., Wiggs, C.L., & Ungerleider, L.G. (1995). Discrete cortical regions associated with knowledge of color and knowledge of action. *Science*, *270*, 102-105.
- Martin, A., Ungerleider, L.G., & Haxby, J.V. (2000). Category-specificity and the brain: The sensory-motor model of semantic representations of objects. In M.S. Gazzaniga (Ed.), *The new cognitive neurosciences* (2nd ed., 1023-1036). Cambridge, MA: MIT Press.
- Martin, A., Wiggs, C.L., Ungerleider, L.G., & Haxby, J.V. (1996). Neural correlates of category-specific knowledge. *Nature*, *379*, 649-652.
- Pecher, D., Zeelenberg, R., & Barsalou, L.W. (2003). Verifying properties from different modalities for concepts produces switching costs. *Psychological Science*, *14*, 119-124.
- Rakinson, D. & Butterworth, G. (1998). Infant attention to object structure in early categorization. *Developmental Psychology*, *34*, 1310-1325.
- Simmons, K., & Barsalou, L.W. (2003). The similarity-in-topography principle: Reconciling theories of conceptual deficits. *Cognitive Neuropsychology*, *20*, 451-486.
- Spelke, E. S. (1991). Physical knowledge in infancy: Reflections on Piaget's theory. In S. G. R. Carey (Ed.), *The epigenesis of mind: Essays on biology and cognition. The Jean Piaget Symposium series* (pp. 133-169). Mahwah, N: Erlbaum.

Nov. 13 Examples of Readings for Language

- Bower, G.H., & Morrow, D.G. (1990). Mental models in narrative comprehension. *Science*, *247*, 44-48.
- Carlson-Radvansky, L.A., & Logan, G.D. (1997). The influence of reference frame selection on spatial template construction. *Journal of Memory and Language*, *37*, 411-437.
- Carlson-Radvansky, L.A., Covey, E.S., & Lattanzi, K.M. (1999). "What" effects on "where": Functional influences on spatial relations. *Psychological Science*, *10*, 516-521.
- Coventry, K.R. (1998). Spatial prepositions, functional relations, and lexical specification. In P. Oliver & K.P. Gapp (Eds.), *Representation and processing of spatial expressions* (pp. 247-262). Mahwah, NJ: Erlbaum.
- Gernsbacher, M.A., Varner, K.R., & Faust, M.E. (1990). Investigating differences in general comprehension skill. *Journal of Experimental Psychology: Learning, Memory, & Cognition*, *16*, 430-445.
- Glenberg, A.M., & Kaschak, M.P. (2002). Grounding language in action. *Psychonomic Bulletin & Review*, *9*, 558-569.
- Glenberg, A.M., & Robertson, D.A. (2000). Symbol grounding and meaning: A comparison of high-dimensional and embodied theories of meaning. *Journal of Memory and Language*, *43*, 379-401.

- Glenberg, A.M., Meyer, M., & Lindem, K. (1987). Mental models contribute to foregrounding during text comprehension. *Journal of Memory and Language*, 26, 69-83.
- Intraub, H., & Hoffman, J.E. (1992). Reading and visual memory: Remembering scenes that were never seen. *American Journal of Psychology*, 105, 101-114.
- Kaschak, M.P., & Glenberg, A.M. (2000). Constructing meaning: The role of affordances and grammatical constructions in sentence comprehension. *Journal of Memory and Language*, 43, 508-529.
- Potter, M.C., Kroll, J.F., Yachzel, B., Carpenter, E., & Sherman, J. (1986). Pictures in sentences: Understanding without words. *Journal of Experimental Psychology: General*, 115, 281-294.
- Richardson, D.C., Spivey, M.J., Barsalou, L.W., & McRae, K. (in press). Spatial representations activated during real-time comprehension of verbs. *Cognitive Science*.
- Spivey, M., Tyler, M., Richardson, D., & Young, E. (2000). Eye movements during comprehension of spoken scene descriptions. *Proceedings of the 22nd Annual Conference of the Cognitive Science Society*, (pp.487-492). Mahwah, NJ: Erlbaum.
- Stanfield, R.A., & Zwaan, R.A. (2001). The effect of implied orientation derived from verbal context on picture recognition. *Psychological Science*, 12, 153-156.
- Zwaan, R.A., Stanfield, R.A., & Yaxley, R.H. (2002). Language comprehenders mentally represent the shapes of objects. *Psychological Science*, 13, 168-171.

Nov. 20 Examples of Readings for Thought

- Ahn, W., & Bailenson, J. (1996). Causal attribution as a search for underlying mechanisms: An explanation of the conjunction fallacy and the discounting principle. *Cognitive Psychology*, 31, 82-123.
- Kahneman, D., & Tversky, A. (1982). The simulation heuristic. In D. Kahneman, P. Slovic, & A. Tversky (Eds.), *Judgment under uncertainty: Heuristics and biases* (pp. 201-210). New York: Cambridge University Press.
- Leslie, A. M. (1984). Spatiotemporal continuity and the perception of causality in infants. *Perception*, 13, 287-305.
- Michotte, A. (1963). *The perception of causality*. London: Methuen. (Chap. 17, The origins of the idea of causality, pp. 255-286).
- Simon, T. J. (1997). Reconceptualizing the origins of number knowledge: A "non-numerical" account. *Cognitive Development*, 12, 349-372.
- Simon, T. J., Hespos, S. J., & Rochat, P. (1995). Do infants understand simple arithmetic? A replication of Wynn (1992). *Cognitive Development*, 10, 253-269.
- Wynn, K. (1992). Addition and subtraction by human infants. *Nature*, 358(6389), 749-750.

Dec. 3 Examples of Readings for Social Cognition

- Adolphs, R., Damasio, H., Tranel, D., Cooper, G., & Damasio, A.R. (2000). A role for somatosensory cortices in the visual recognition of emotion as revealed by three-dimensional lesion mapping. *Journal of Neuroscience*, 20, 2683-2690.
- Barsalou, L.W., Niedenthal, P.M., Barbey, A., & Ruppert, J. (2003). Social embodiment. In B. Ross (Ed.), *The Psychology of Learning and Motivation*, Vol. 43 (pp. 43-92). San Diego: Academic Press.
- Johnson, M. (1997). *Developmental cognitive neuroscience*. Oxford, U.K.: Blackwell Publishers. (Chapter 4, Face recognition and social cognition, pp 98-125).
- Bigelow, A. E. (1998). Infants' sensitivity to familiar imperfect contingencies in social interaction. *Infant Behavior & Development*, 21, 149-161.
- Rochat, P. (2004). *Emerging Co-Awareness*. In G. Bremner and A. Slater (Eds.) *Theories of Infant Development*. Blackwell Publishing.
- Rochat, P., Morgan, R., & Carpenter, M. (1997). Young infants' sensitivity to movement information specifying social causality. *Cognitive Development*, 12, 441-465.
- Williamson, D.A., Davis, C.J., Goreczny, A.J., Blouin, D.D. (1989). Body-image disturbances in bulimia nervosa: Influences of actual body size. *Journal of Abnormal Psychology*, 98, 97-99.