

Social Cognitive Neuroscience

Fall 2008

Prof. Kevin Ochsner
Weds 10:10 – 12
405 Schermerhorn Hall
Psych W3680/G4685

Overview

Social cognitive neuroscience seeks to integrate the theories and methods of its parent disciplines, social psychology and cognitive neuroscience. As such, it seeks to explain social and emotional behavior at three levels of analysis: The social level, which includes descriptions of experience, behavior, and context; the cognitive level, which specifies information processing mechanisms; and the neural level, which specifies neural systems that instantiate these processes. The course begins with foundational concepts (multilevel analyses of behavior, converging evidence, the interaction of controlled and automatic processes), which students use to analyze findings in number of core content domains (including emotional appraisal, emotion regulation, person perception, stereotyping, attitudes and beliefs, social decision making and cooperation).

Prerequisites: Course equivalents of at least two of the following courses (W1001, W1010, W2630, W3410, W3480, W3485) and/or the instructor's permission.

Course requirements

Each week, students will attend a two hour seminar. No later than 5:00 p.m. of the preceding evening, students will submit a 2 page seed paper to the course instructor. Seed papers analyze and integrate the hypotheses, conceptual premises, methods and findings of assigned research articles, and will be used to launch discussion during each meeting. For the first course meeting, and for selected topics throughout the duration of the course, the instructor will use one-half to one hour of meeting time for lectures that will provide historical context, background, and conceptual explication.

For the final paper students will present a proposal for an original experiment that employs the social cognitive neuroscience approach. This proposal follows a specified format (called QuALMRI, to be described in a handout).

Grading is allocated as follows:

Seed papers 40%

Participation in discussion 25%

Final paper 35%

PSYC W3680 is an advanced undergraduate seminar, designed particularly for students who are majoring in Psychology or in Neuroscience and Behavior. It fulfills the following degree requirements:

- For the Psychology major or concentration, W3680 meets the Group III (Social, Personality, and Abnormal) distribution requirement.
- For the Neuroscience and Behavior joint major, W3680 will fulfill the 5th Psychology requirement: “one advanced psychology seminar from a list approved by the Psychology Department advisor to the program.”
- W3680 will meet the social science requirement of GS, provided that students obtain the necessary permissions and have taken the prerequisite psychology courses. For instance, a student who has completed PSYC 1001 (The Science of Psychology) and PSYC 1010 (Mind, Brain, and Behavior), would be able to use W3680 for GS social science requirement. However, students who are majoring in Psychology or in Neuroscience and Behavior will have priority over students who are taking the course for the social science requirement.

PSYC G4685 is a graduate seminar designed for students with interests in the intersection of social psychology and cognitive neuroscience.

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Reading List

9/03 1. Introduction, origins, overview

- Ochsner, K. N. (2007). Social Cognitive Neuroscience: Historical Development, Core Principles, and Future Promise. Kruglanski, A., & Higgins, E. T. (Eds.). Social Psychology: A Handbook of Basic Principles (pp. 39-66). 2nd Ed. New York: Guilford Press. [**First section only**]

Supplemental

- Ochsner, K. N., & Lieberman, M. D. (2001). The emergence of social cognitive neuroscience. American Psychologist, 56(9), 717-734.
- Ochsner, K. N., & Kosslyn, S. M. (1999). The cognitive neuroscience approach. In B. M. Bly & D. E. Rumelhart (Eds.), Cognitive science (pp. 319-365). San Diego, CA: Academic Press, Inc.
- Wegner, D. M., & Gilbert, D. T. (2000). Social psychology—The science of human experience. In H. Bless & J. P. Forgas (Eds.), The message within: The role of subjective experience in social cognition and behavior. Philadelphia, PA: Psychology Press.

Handout

- QuALMRI outline

9/10 2. Basic Principles

Social Cognition

- Griffin, D. W. & Ross, L. (1991). Subjective construal, social inference, and human misunderstanding. Advances in Experimental Social Psychology, 24, 319-359. [selections to be noted]
- Gilbert, D. T. (1999). What the mind's not. In S. Chaiken & Y. Trope (Eds.), Dual process theories in social psychology. New York: Guilford.

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- Baron-Cohen, S. (1995). *Mindblindness: An essay on autism and theory of mind*. Cambridge, MA: The MIT Press. [**Chapters 1-3**]
- Ochsner, K. N. (2007). Social Cognitive Neuroscience: Historical Development, Core Principles, and Future Promise. Kruglanski, A., & Higgins, E. T. (Eds.). Social Psychology: A Handbook of Basic Principles (pp. 39-66). 2nd Ed. New York: Guilford Press. [**Second section only**]

Supplemental

- Cacioppo, J. T., Berntson, G. G., Lorig, T. S., Norris, C. J., Rickett, E., & Nusbaum, H. (2003). Just because you're imaging the brain doesn't mean you can stop using your head: a primer and set of first principles. J Pers Soc Psychol, 85(4), 650-661.
- Gilbert, D. (2002). Are psychology's tribes ready to form a nation? Trends in Cognitive Sciences, 6(1), 3.
- Wegner, D. M., & Bargh, J. A. (1998). Control and automaticity in social life. In D. T. Gilbert & S. T. Fiske (Eds.), The handbook of social psychology, Vol. 1 (4th ed.) (pp. 446-496). New York, NY: McGraw-Hill. [**Selection: pp. 447-465**]

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9/17 3. Self I: Agency(?)

Social Cognition

- Bargh, J. A., Gollwitzer, P. M., Lee-Chai, A., Barndollar, K., & Trötschel, R. (2001). The automated will: Nonconscious activation and pursuit of behavioral goals. *Journal of Personality & Social Psychology* Vol 81(6), 1014-1027.
- Wegner, D. M. (2003). The mind's best trick: How we experience conscious will. Trends in Cognitive Sciences, 7(2), 65-69.

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- Blakemore, S. J., Wolpert, D. M., & Frith, C. D. (1998). Central cancellation of self-produced tickle sensation. *Nature Neuroscience*, 1(7), 635-640.
- Farrer, C., Franck, N., Georgieff, N., Frith, C. D., Decety, J., & Jeannerod, M. (2003). Modulating the experience of agency: a positron emission tomography study. Neuroimage, 18(2), 324-333.

Supplemental

- Ferguson, M. J., & Bargh, J. A. (2004). How social perception can automatically influence behavior. *Trends in Cognitive Sciences*, 8(1), 33-39.
- Gilbert, D. T., Brown, R. P., Pines, E. C., & Wilson, T. D. (2000). The illusion of external agency. *Journal of Personality and Social Psychological*, 79(5), 690-700.
- Scepkowski, L. A., & Cronin-Golomb, A. (2003). The alien hand: cases, categorizations, and anatomical correlates. *Behav Cogn Neurosci Rev*, 2(4), 261-277.
- Vogeley, K., & Fink, G. R. (2003). Neural correlates of the first-person-perspective. *Trends Cogn Sci*, 7(1), 38-42.

9/24 4. Self II: Self-knowledge

Social Cognition

- Baumeister, R. F. (1998). The self. In D. T. Gilbert & S. T. Fiske (Eds.), The handbook of social psychology, Vol. 2 (4th ed.) (pp. 680-740). New York, NY: McGraw-Hill. [**PAGES 680-695 (not section on self-esteem)**].
- Nisbett, R. E., & Wilson, T. D. (1977). Telling more than we can know: Verbal reports on mental processes. *Psychological Review*, 84(3), 231-259.

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- Beer JS. 2007. The default self: feeling good or being right? *Trends in cognitive sciences*, 11, 187-9.
- Kelley, W. M., Macrae, C. N., Wyland, C. L., Caglar, S., Inati, S., & Heatherton, T. F. (2002). Finding the self? An event-related fMRI study. J Cogn Neurosci, 14(5), 785-794.
- Klein, S. B., Loftus, J., & Kihlstrom, J. F. (1996). Self-knowledge of an amnesic patient: Toward a neuropsychology of personality and social psychology. Journal of Experimental Psychology: General, 125(3), 250-260.
- Ramachandran, V. S. (1995). Anosognosia in parietal lobe syndrome. Conscious Cogn, 4(1), 22-51. [**Selection: PAGES 21-33.**]

Supplemental

- Keenan, J. P., Wheeler, M. A., Gallup, G. G., Jr., & Pascual-Leone, A. (2000). Self-recognition and the right prefrontal cortex. Trends in Cognitive Sciences, 4(9), 338-344.
- Scepkowski, L. A., & Cronin-Golomb, A. (2003). The alien hand: cases, categorizations, and anatomical correlates. *Behav Cogn Neurosci Rev*, 2(4), 261-277.
- Turk, D. J., Heatherton, T. F., Kelley, W. M., Funnell, M. G., Gazzaniga, M. S., & Macrae, C. N. (2002). Mike or me? Self-recognition in a split-brain patient. Nat Neurosci, 5(9), 841-842.

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10/01 5. Self III: Feeling

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- Feldman Barrett, L., Ochsner, K. N., & Gross, J. J. (2007). Automaticity and emotion. In J. A. Bargh (Ed.), *Social Psychology and the Unconscious: The Automaticity of Higher Mental Processes* (pp. 173-218). New York: Psychology Press.

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- Anderson, A. K., & Phelps, E. A. (2002). Is the human amygdala critical for the subjective experience of emotion? Evidence of intact dispositional affect in patients with amygdala lesions. *J Cogn Neurosci*, *14*(5), 709-720.
- Berridge, K. C., & Winkielman, P. (2003). What is an unconscious emotion? (The case for unconscious "liking"). *Cognition & Emotion*, *17*(2), 181-211.
- Berns, G. S. (2004). Something funny happened to reward. *Trends Cogn Sci*, *8*(5), 193-194.
- Calder, A. J., Lawrence, A. D., & Young, A. W. (2001). Neuropsychology of fear and loathing. *Nature Reviews Neuroscience*, *2*(5), 352-363.
- Craig, A. D. (2004). Human feelings: why are some more aware than others? *Trends Cogn Sci*, *8*(6), 239-241.

Supplemental

- Anderson, A. K., Christoff, K., Stappen, I., Panitz, D., Ghahremani, D. G., Glover, G., Gabrieli, J. D., & Sobel, N. (2003). Dissociated neural representations of intensity and valence in human olfaction. *Nat Neurosci*, *6*(2), 196-202.
- Hamann, S. B., Ely, T. D., Hoffman, J. M., & Kilts, C. D. (2002). Ecstasy and agony: activation of the human amygdala in positive and negative emotion. *Psychol Sci*, *13*(2), 135-141.
- Mobbs, D., Greicius, M. D., Abdel-Azim, E., Menon, V., & Reiss, A. L. (2003). Humor modulates the mesolimbic reward centers. *Neuron*, *40*(5), 1041-1048.
- Moran, J. M., Wig, G. S., Adams, R. B., Jr., Janata, P., & Kelley, W. M. (2004). Neural correlates of humor detection and appreciation. *Neuroimage*, *21*(3), 1055-1060.
- Phan, K. L., Taylor, S. F., Welsh, R. C., Decker, L. R., Noll, D. C., Nichols, T. E., Britton, J. C., & Liberzon, I. (2003). Activation of the medial prefrontal cortex and extended amygdala by individual ratings of emotional arousal: a fMRI study. *Biol Psychiatry*, *53*(3), 211-215.

10/08 6. Self IV: Self-Control

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- Gross, J. J. (1998). Antecedent- and response-focused emotion regulation: divergent consequences for experience, expression, and physiology. *Journal of Personality and Social Psychology*, *74*(1), 224-237.
- Wegner, D. M., & Gold, D. B. (1995). Fanning old flames: Emotional and cognitive effects of suppressing thoughts of a past relationship. *Journal of Personality & Social Psychology*, *68*(5), 782-792.

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- Arnsten, A. F. (1998). The biology of being frazzled. *Science*, *280*(5370), 1711-1712.
- Beer JS, John OP, Scabini D, Knight RT. 2006. Orbitofrontal cortex and social behavior: integrating self-monitoring and emotion-cognition interactions. *Journal of cognitive neuroscience* *18*:871-9
- McClure, S. M., Laibson, D. I., Loewenstein, G., & Cohen, J. D. (2004). Separate neural systems value immediate and delayed monetary rewards. *Science*, *306*(5695), 503-507.
- Ochsner, K. N. & Gross, J. J. (2008). Cognitive emotion regulation: Insights from social cognitive

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and affective neuroscience. *Currents Directions in Psychological Science*, 17(1), 153-158.

Supplemental

- Anderson, M. C., Ochsner, K. N., Kuhl, B., Cooper, J., Robertson, E., Gabrieli, S. W., et al. (2004). Neural systems underlying the suppression of unwanted memories. *Science*, 303(5655), 232-235.
- Barrett, L. F., Gross, J., Christensen, T. C., & Benvenuto, M. (2001). Knowing what you're feeling and knowing what to do about it: Mapping the relation between emotion differentiation and emotion regulation. *Cognition & Emotion*, 15(6), 713-724.
- Beer, J. S., Heerey, E. A., Keltner, D., Scabini, D., & Knight, R. T. (2003). The regulatory function of self-conscious emotion: insights from patients with orbitofrontal damage. *Journal of Personality and Social Psychology*, 85(4), 594-604.
- Beauregard, M., Levesque, J., & Bourgouin, P. (2001). Neural correlates of conscious self-regulation of emotion. *Journal of Neuroscience*, 21(18), RC165.
- Carter, C. S., Braver, T. S., Barch, D. M., Botvinick, M. M., Noll, D., & Cohen, J. D. (1998). Anterior cingulate cortex, error detection, and the online monitoring of performance. *Science*, 280(5364), 747-749.
- Gehring, W. J., Himle, J., & Nisenson, L. G. (2000). Action-monitoring dysfunction in obsessive-compulsive disorder. *Psychol Science*, 11(1), 1-6.
- Gehring, W. J., & Knight, R. T. (2000). Prefrontal-cingulate interactions in action monitoring. *Nat Neurosci*, 3(5), 516-520.
- Taylor, S. F., Phan, K. L., Decker, L. R., & Liberzon, I. (2003). Subjective rating of emotionally salient stimuli modulates neural activity. *Neuroimage*, 18(3), 650-659.
- Wegner, D. M., Broome, A., & Blumberg, S. J. (1997). Ironic effects of trying to relax under stress. *Behaviour Research & Therapy*, 35(1), 11-21.

10/15 7. Self V: Beliefs & expectancies [Guest instructor]

Social Cognition

- Gilbert, D. T. (1991). How mental systems believe. *American Psychologist*, 46(2), 107-119.
- Lane, J. D., & Wegner, D. M. (1995). The cognitive consequences of secrecy. *Journal of Personality & Social Psychology*, 69(2), 237-253.

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- Lieberman, M. D., Ochsner, K. N., Gilbert, D. T., & Schacter, D. L. (2001). Do amnesics exhibit cognitive dissonance reduction? The role of explicit memory and attention in attitude change. *Psychological Science*, 12, 135-140.
- Rainville, P., Carrier, B., Hofbauer, R. K., Bushnell, M. C., & Duncan, G. H. (1999). Dissociation of sensory and affective dimensions of pain using hypnotic modulation. *Pain*, 82(2), 159-171.
- Wager, T. D., Rilling, J. K., Smith, E. E., Sokolik, A., Casey, K. L., Davidson, R. J., et al. (2004). Placebo-induced changes in FMRI in the anticipation and experience of pain. *Science*, 303(5661), 1162-1167.

Supplemental

- Kim, H., Somerville, L. H., Johnstone, T., Polis, S., Alexander, A. L., Shin, L. M., et al. (2004). Contextual Modulation of Amygdala Responsivity to Surprised Faces. *Journal of Cognitive Neuroscience*, 16(10), 1730-1745.
- Kosslyn, S. M., Thompson, W. L., Costantini-Ferrando, M. F., Alpert, N. M., & Spiegel, D. (2000). Hypnotic visual illusion alters color processing in the brain. *American Journal of Psychiatry*, 157(8), 1279-1284.
- Salomons, T. V., Johnstone, T., Backonja, M. M., & Davidson, R. J. (2004). Perceived controllability modulates the neural response to pain. *J Neurosci*, 24(32), 7199-7203.

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- Sawamoto, N., Honda, M., Okada, T., Hanakawa, T., Kanda, M., Fukuyama, H., et al. (2000). Expectation of pain enhances responses to nonpainful somatosensory stimulation in the anterior cingulate cortex and parietal operculum/posterior insula: an event-related functional magnetic resonance imaging study. *Journal of Neuroscience*, 20(19), 7438-7445.

10/22 8. Perceiving people I: From perception to action [Guest instructor –or– class on Friday 10/24]

Social Cognition

- Lieberman, M. D., Gaunt, R., Gilbert, D. T., & Trope, Y. (2002). Reflection and reflexion: A social cognitive neuroscience approach to attributional inference. *Advances in Experimental Social Psychology*, 34, 199-249. [pages 1-12].
- Lakin, J. L., Jefferis, V. E., Cheng, C. M., & Chartrand, T. L. (2003). The chameleon effect as social glue: Evidence for the evolutionary significance of nonconscious mimicry. *Journal of Nonverbal Behavior*, 27(3), 145-162.

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- Adams, R. B., Jr., Gordon, H. L., Baird, A. A., Ambady, N., & Kleck, R. E. (2003). Effects of gaze on amygdala sensitivity to anger and fear faces. *Science*, 300(5625), 1536.
- Anderson, A. K., Christoff, K., Panitz, D., De Rosa, E., & Gabrieli, J. D. (2003). Neural correlates of the automatic processing of threat facial signals. *J Neurosci*, 23(13), 5627-5633.
- Gallese, V., Keysers, C., & Rizzolatti, G. (2004). A unifying view of the basis of social cognition. *Trends Cogn Sci*, 8(9), 396-403.
- Meltzoff, A. N., & Decety, J. (2003). What imitation tells us about social cognition: a rapprochement between developmental psychology and cognitive neuroscience. *Philos Trans R Soc Lond B Biol Sci*, 358(1431), 491-500.

Supplemental

- Adolphs, R., Baron-Cohen, S., & Tranel, D. (2002). Impaired recognition of social emotions following amygdala damage. *J Cogn Neurosci*, 14(8), 1264-1274.
- Allison, T., Puce, A., & McCarthy, G. (2000). Social perception from visual cues: role of the STS region. *Trends in Cognitive Sciences*, 4(7), 267-278.
- Amaral, D. G., Capitanio, J. P., Jourdain, M., Mason, W. A., Mendoza, S. P., & Prather, M. (2003). The amygdala: is it an essential component of the neural network for social cognition? *Neuropsychologia*, 41(2), 235-240.

10/29 9. Perceiving people II: Inferring intentions, making attributions

Social Cognition

- Baron-Cohen, S. (1995). *Mindblindness: An essay on autism and theory of mind*. Cambridge, MA: The MIT Press. [Selection: Chapters 4-5, 7.]
- Gilbert, D. T., Pelham, B. W., & Krull, D. S. (1988). On cognitive busyness: When person perceivers meet persons perceived. *Journal of Personality & Social Psychology*, 54(5), 733-740.

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- Harris, L. T., & Fiske, S. T. (in press). Attributions on the brain: Neuroimaging dispositional inference, beyond theory of mind. *Neuroimage*.
- Gallagher, H. L., & Frith, C. D. (2003). Functional imaging of 'theory of mind'. *Trends Cogn Sci*, 7(2), 77-83.
- Mitchell, J. P., Heatherton, T. F., & Macrae, C. N. (2002). Distinct neural systems subserve person and object knowledge. *Proc Natl Acad Sci U S A*, 99(23), 15238-15243.

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Supplemental

- Blakemore, S. J., & Decety, J. (2001). From the perception of action to the understanding of intention. *Nat Rev Neurosci*, *2*(8), 561-567.
- Calder, A. J., Lawrence, A. D., Keane, J., Scott, S. K., Owen, A. M., Christoffels, I., & Young, A. W. (2002). Reading the mind from eye gaze. *Neuropsychologia*, *40*(8), 1129-1138.
- Castelli, F., Happe, F., Frith, U., & Frith, C. (2000). Movement and mind: a functional imaging study of perception and interpretation of complex intentional movement patterns. *Neuroimage*, *12*(3), 314-325.
- Gallagher, H. L., Jack, A. I., Roepstorff, A., & Frith, C. D. (2002). Imaging the intentional stance in a competitive game. *Neuroimage*, *16*(3 Pt 1), 814-821.
- Keysers, C., & Perrett, D. I. (2004). Demystifying social cognition: a Hebbian perspective. *Trends Cogn Sci*, *8*(11), 501-507.

11/05 10. Self & Other I: Basic Processes: The Same or Different?

- Newman, L. S., Duff, K. J., & Baumeister, R. F. (1997). A new look at defensive projection: thought suppression, accessibility, and biased person perception. *Journal of Personality and Social Psychological*, *72*(5), 980-1001.
- Dunning, David. Prediction: The inside view. (2007). Kruglanski, A. W & Higgins, E. Tory (Eds). *Social psychology: Handbook of basic principles* (2nd ed.). (pp. 69-90). New York, NY, US: Guilford Press. [**selection: PAGES 69-72, 78-80, 82-86**]

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- Mitchell, J. P., Macrae, C. N., & Banaji, M. R. (2006). Dissociable medial prefrontal contributions to judgments of similar and dissimilar others. *Neuron*, *50*(4), 655-663.
- Ochsner, K. N., Beer, J. S., Robertson, E., Cooper, J., Gabrieli, J. D. E., Kihlstrom, J. F., et al. (2005). The neural correlates of direct and reflected self-knowledge. *Neuroimage*, *28*(4), 797-814.

Supplemental

- Epley, N., Keysar, B., Van Boven, L., & Gilovich, T. (2004). Perspective Taking as Egocentric Anchoring and Adjustment. *Journal of Personality & Social Psychology*, *87*(3), 327-339.
- Kruger, J., & Gilovich, T. (2004). Actions, intentions, and self-assessment: The road to self-enhancement is paved with good intentions. *Personality & Social Psychology Bulletin*, *30*(3), 328-339.
- Taylor, S. E., & Brown, J. D. (1988). Illusion and well-being: A social psychological perspective on mental health. *Psychological Bulletin*, *103*(2), 193-210.

11/12 11. Self and Other II: Feeling for others, good and bad. Or: empathy, prosocial behavior and prejudice

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- Batson, C. D., Polycarpou, M. P., Harmon-Jones, E., Imhoff, H. J., & et al. (1997). Empathy and attitudes: Can feeling for a member of a stigmatized group improve feelings toward the group? *Journal of Personality & Social Psychology*, *72*(1), 105-118.
- Fiske, S. T. (2002). What we know about bias and intergroup conflict, the problem of the century. *Current Directions in Psychological Science*, *11*(4), 123-128.
- Zaki, J. Bolger, N. & Ochsner, K. N. (2008). It takes two: The interpersonal basis of empathic accuracy. *Psychological Science*, *19*(4), 399-404.

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- Kampe, K. K., Frith, C. D., Dolan, R. J., & Frith, U. (2001). Reward value of attractiveness and gaze. *Nature*, *413*(6856), 589.
- Lieberman MD, Hariri A, Jarcho JM, Eisenberger NI, Bookheimer SY. 2005. An fMRI investigation of race-related amygdala activity in African-American and Caucasian-American individuals. *Nature neuroscience* 8:720-2.
- Singer, T., Seymour, B., O'Doherty, J., Kaube, H., Dolan, R. J., & Frith, C. D. (2004). Empathy for pain involves the affective but not sensory components of pain. *Science*, *303*(5661), 1157-1162.
- Wheeler, M. E., & Fiske, S. T. (2005). Controlling Racial Prejudice: Social-Cognitive Goals Affect Amygdala and Stereotype Activation. *Psychological Science*, *16*(1), 56-63.
- Winston, J. S., Strange, B. A., O'Doherty, J., & Dolan, R. J. (2002). Automatic and intentional brain responses during evaluation of trustworthiness of faces. *Nat Neurosci*, *5*(3), 277-283.

Supplemental

- Amodio, D. M., Harmon-Jones, E., & Devine, P. G. (2003). Individual differences in the activation and control of affective race bias as assessed by startle eyeblink response and self-report. *J Pers Soc Psychol*, *84*(4), 738-753.
- Carr, L., Iacoboni, M., Dubeau, M. C., Mazziotta, J. C., & Lenzi, G. L. (2003). Neural mechanisms of empathy in humans: a relay from neural systems for imitation to limbic areas. *Proc Natl Acad Sci U S A*, *100*(9), 5497-5502.
- Ellis, H. D., & Lewis, M. B. (2001). Capgras delusion: a window on face recognition. *Trends in Cognitive Sciences*, *5*(4), 149-156.
- Epley, N., Savitsky, K., & Gilovich, T. (2002). Empathy neglect: Reconciling the spotlight effect and the correspondence bias. *Journal of Personality & Social Psychology*, *83*(2), 300-312.
- Fiske, S. T., Cuddy, A. J. C., Glick, P., & Xu, J. (2002). A model of (often mixed) stereotype content: Competence and warmth respectively follow from perceived status and competition. *Journal of Personality & Social Psychology*, *82*(6), 878-902.
- McClelland, J. L., McNaughton, B. L., & O'Reilly, R. C. (1995). Why there are complementary learning systems in the hippocampus and neocortex: insights from the successes and failures of connectionist models of learning and memory. *Psychol Rev*, *102*(3), 419-457. [selections to be noted].
- Milne, E., & Grafman, J. (2001). Ventromedial prefrontal cortex lesions in humans eliminate implicit gender stereotyping. *J Neurosci*, *21*(12), RC150.
- Ochsner, K. N., Knierim, K., Ludlow, D., Hanelin, J., Ramachandran, T., & Mackey, S. (2004). Reflecting upon feelings: An fMRI study of neural systems supporting the attribution of emotion to self and other. *Journal of Cognitive Neuroscience*, *16*(10), 1746-1772
- Phelps, E. A., Cannistraci, C. J., & Cunningham, W. A. (2003). Intact performance on an indirect measure of race bias following amygdala damage. *Neuropsychologia*, *41*(2), 203-208.
- Phelps, E. A., O'Connor, K. J., Cunningham, W. A., Funayama, E. S., Gatenby, J. C., Gore, J. C., & Banaji, M. R. (2000). Performance on indirect measures of race evaluation predicts amygdala activation. *Journal of Cognitive Neuroscience*, *12*(5), 729-738.

11/19 No class

11/26 12. Self and Other III: Morality, Competition, and Cooperation

Social Cognition

- Batson, C. D., & Thompson, E. R. (2001). Why don't moral people act morally? Motivational considerations. *Current Directions in Psychological Science*, *10*(2), 54-57.
- Fehr, E., & Gächter, S. (2002). Altruistic punishment in humans. *Nature*, *415*(6868), 137-140.
- Fehr, E., & Rockenbach, B. (2004). Human altruism: economic, neural, and evolutionary perspectives. *Curr Opin Neurobiol*, *14*(6), 784-790.

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- Fiske, S. T., Harris, L. T., & Cuddy, A. J. C. (2004). Why Ordinary People Torture Enemy Prisoners. *Science*, 306(5701), 1482-1483.

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- Anderson, S. W., Bechara, A., Damasio, H., Tranel, D., & Damasio, A. R. (1999). Impairment of social and moral behavior related to early damage in human prefrontal cortex. *Nature Neuroscience*, 2(11), 1032-1037.
- de Quervain, D. J., Fischbacher, U., Treyer, V., Schellhammer, M., Schnyder, U., Buck, A., et al. (2004). The neural basis of altruistic punishment. *Science*, 305(5688), 1254-1258.
- Greene, J. D., Sommerville, R. B., Nystrom, L. E., Darley, J. M., & Cohen, J. D. (2001). An fMRI investigation of emotional engagement in moral judgment. *Science*, 293(5537), 2105-2108.
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12/9-12/11 Study Period

12/12-12/19 Final examinations

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