

COGS171GS: Social Cognition and The Mirror Neuron System

MTuWTH 9:00 am-10:30 am
Summer 2026 Barcelona, Spain

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Office Hours: TBD

This class examines the role of the human mirror neuron system in social cognition, including action understanding, empathy, and theory of mind, among other social behaviors. It will focus on the neuroanatomy, physiology, development, and functional correlates, as well as clinical evidence for and against this hypothesis.

All students will:

1. Write one critical review or “thought” essay every week (starting Week 2) based on the required readings that week. Each essay will be one page at the most (**points deducted if over this limit**). Instructor will describe what a critical review is and give samples of good reviews in class. Critical reviews are due on Monday of the assigned week - for a total of 4 essays and 40% of the grade.
2. Participate in class discussions for 20% of the grade. Discussions will focus on a different topic each week and groups are required to provide, in class, two arguments, one for and one against the discussion topic.
3. Take the final exam for the remaining 40% of the grade.

Week 1 6/29-7/2 What is Social Cognition?

Beaudoin, C. and Beauchamp, M. H. (2020). Social Cognition. Handbook of Clinical Neurology, Vol. 173 (3rd series) Neurocognitive Development: Normative Development A. Gallagher, C. Bulteau, D. Cohen and J.L. Michaud, Editors <https://doi.org/10.1016/B978-0-444-64150-2.00022-8>.

Week 2 7/6-7/9 Neural Basis of Social Cognition: Polyvagal Theory and Mirror Neurons

Mukamel, R. et al. (2010). Single-neuron responses in humans during execution and observation of actions. *Current Biology*, 20(1-7): 750-756.

Schmidt et al. (2021). The human mirror neuron system - A common neural basis for social cognition? *Psychophysiology*, May;58(5):e13781. doi:10.1111/psyp.13781.

Porges, S.W. (2021). Polyvagal Theory: A biobehavioral journey to sociality. *Comprehensive Psychoneuroendocrinology*, 7.

Week 3 7/13-7/16 Mirror Neurons in Other Species and Sensory Modalities

Bonini, L., Rotunno, C., Arcuri, E., and Gallese, V. (2022). Mirror Neurons 30 Years Later: Implications and Applications. Trends in Cognitive Sciences, Vol 26(9).

Mooney, R. (2014). Auditory-vocal mirroring in songbirds. Phil. Trans. R. Soc. B 369.

Ferrari et al., (2023). Aggression: The dark side of mirror neurons sheds light on their function. Current Biology 33, R296–R318, April 24.

Week 4 7/20-7/23 Empathy, the Aesthetic Experience, and the Predictive Brain

Barrett, L.F. (2024). The ‘Fight or Flight’ Idea Misses the Beauty of What the Brain Really Does. Scientific American.

Ferrari, P.F. and Coude, G. (2018). Mirror neurons, embodied emotions, and empathy. Ch. 6 in Neuronal Correlates of Empathy. <http://dx.doi.org/10.1016/B978-0-12-805397-3.00006-1>

Sutton, J. (2023). Mirror neurons and the neuroscience of empathy. Body and Brain. Positive Psychology, <https://positivepsychology.com/mirror-neurons/#hero-single>

Week 5 7/27-7/30 Disorders of Mirroring and Alternative Views

Hickok, G. (2009). Eight problems for the mirror neuron theory of action understanding in monkeys and humans. J. Cognitive Neuroscience, Jan 13, 1-15.

Oberman, L.M., et al. (2005). EEG evidence for mirror neuron dysfunction in autism spectrum disorders. Cog. Brain Res., 24(2): 190-198.

Maull, F. (2025). The Social Brain Revolution: How Expanded States Rewire Us for Collective Healing. Fleet Maull Blog.

FINAL on Thursday July 30th in class (morning)

Farewell Dinner - Friday July 31st (evening)

ACADEMIC INTEGRITY

Academic integrity is expected at all times; cheating and/or plagiarism will not be tolerated. You are encouraged to study and confer with your classmates, but critical reviews must be completed alone. Cheating and/or plagiarism will result in automatic failure of the course.