COGS171: Mirror Neuron System and Social Cognition  
Fall Quarter 2011  TuTH 3:30-4:50 pm  WLH 2204

**Instructor:** J. A. Pineda, Ph.D.  
**TA:** Mike Datko, GSR  
**Office Hours:** T 9-11 am, CSB 205  
**TBD**

This class will examine the neuroanatomy, physiology, and functional correlates of the human mirror neuron system and its putative role in social cognition, e.g., action understanding, empathy, and theory of mind. We will examine the developmental, neuroimaging, electrophysiological, as well as clinical evidence for and against this hypothesis.

<table>
<thead>
<tr>
<th>Week 0</th>
<th>9/22</th>
<th><strong>INTRODUCTION</strong></th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Week 1</th>
<th>9/27-9/29</th>
<th><strong>IN THE BEGINNING...</strong></th>
</tr>
</thead>
</table>


<table>
<thead>
<tr>
<th>Week 2</th>
<th>10/4-10/6</th>
<th><strong>THE ONTOGENY AND PHYLOGENY OF MIRROR NEURONS</strong></th>
</tr>
</thead>
</table>

**Lyons, D. E.** The rational continuum of human imitation (*Text p. 77*).


<table>
<thead>
<tr>
<th>Week 3*</th>
<th>10/11-10/13</th>
<th><strong>UNIFYING SOCIAL COGNITION</strong></th>
</tr>
</thead>
</table>


**Keysers, C. and Gazzola, V.** Unifying social cognition (*Text p. 3*).

**Gallese, V.** Mirror neurons and the neural exploitation hypothesis: from embodied simulation to social cognition (*Text p. 163*)

<table>
<thead>
<tr>
<th>Week 4*</th>
<th>10/18 -10/20</th>
<th><strong>IS MIRRORING THE SAME AS SIMULATION?</strong> (Mike Datko)</th>
</tr>
</thead>
</table>


Week 5  10/25  MIDTERM
10/27  DOES MIRRORING OCCUR FOR SOUNDS? (Matt Schalles)


Week 6**  11/1-11/3  ARE MIRROR NEURONS INVOLVED IN UNDERSTANDING THE MENTAL STATES OF OTHERS?


Week 7*  11/8-11/10  IS EMPATHY A FUNCTION OF MIRRORING?


Week 8**  11/15-11/17  EMOTIONS AND MIRRORING (Mike Datko)

Winkielman, P. Niedenthal, P.M. and Oberman, L.M.  Embodied perspective on emotion-cognition interactions (Text p. 235).

Week 9*  11/22  DISORDERS OF MIRRORING  (Mike Datko)


Bernier, R. and Dawson, G.  The role of mirror neuron dysfunction in autism (Text p. 261).

Week 10*  11/29-12/1  QUESTIONS AND ALTERNATIVE VIEWS


Gallagher, S.  Neural simulation and social cognition (Text p. 355).
Southgate, V., Gergely, G. and Csibra, G.  Does the mirror neuron system and its impairment explain human imitation and autism?  (Text p. 331).

12/05  FINAL  3-6 pm

All students will:

1. Write a critical review or “thought” essay (no longer than 1 page) on the weeks labeled with an asterisk (Weeks 3,4,7,9,10) based on one of the readings that week. Readings in bold are required reading. See class website (or ask instructor) for a sample of a critical review. Essays are due on Tuesday of the assigned week - for a total of 5 essays (20%).
2. Have an option to work in groups or individually
3. If you choose group work (4-6 students) you will be responsible for:
   • a class presentation on one of the readings. Each group will provide both the pro and con points of view. Presentations may start as early as Week 2. See TA/Instructor or class website for instructions on class presentations. (5%)  
   • a research proposal (8-10 pages) for an experiment that addresses an issue relevant to mirroring and social cognition. Proposal is due at the end of the quarter (no later than Thursday of Week 10). Each student will be graded for the part of the proposal they are assigned and you will also receive an overall group grade. See class website for instructions on structure of proposal. (25%)
4. If you choose individual work then you will be required to write the research proposal on your own. Additionally, you will be required to do two extra critical reviews (on weeks labeled with a double asterisk - **; for a total of 7 instead of 5. One is to make up for the class presentation and the other is to make up for group work itself.
4. Take the midterm (20%) and final (30%).

* A pdf version of each of the assigned articles will be on the class website (http://cogsci.ucsd.edu/~pineda/COGS171/index.html) for students to download.