The human language faculty: embodied or abstract?

Language is a universal capacity that is apparently unique to humans. Noam Chomsky has famously asserted that language is the product of a specialized language system, defined by abstract universal rules (Universal Grammar). But a large body of research suggests that language is strongly **embodied**. Language structure, in this view, is constrained not by abstract mental principles, but rather by pressures that are directly imposed by the human body (colloquially, “below the brain”)—the sensory and motor systems.

This course seeks to adjudicate between these competing views. In the weeks ahead, we will try to determine what allows humans (and only humans) to acquire language. To address this question, we will read literature from a variety of sources, ranging from cognitive neuroscience to linguistics, and using multiple sources of evidence, informed by both mind and brains.

**Course format**
A general course outline and a readers’ digest are listed below. Most lectures will begin with an introductory lecture by the instructor, followed by discussions of specific (mostly short) papers, which will be assigned to the class. We will also engage in reiterative writing projects, allowing students to obtain multiple reactions to their work and revise their writing accordingly.

**Reading materials.** Please see the reading lists attached.

**Student’s duties:**
- **Weekly duties**
  - Read all assigned materials and come prepared to engage in discussion.
  - Short semi-weekly presentations of the reading materials.
- **Final paper.** One goal of the seminar is to help you improve their writing, based on feedback from peers and the instructor. Students will be asked to write a final paper of about 8-10 pages, related to the topics discussed in class. To make this a successful learning experience, you will be given multiple small-scale tasks that will allow you to obtain feedback on your work and revise it throughout the semester.
Your grade is based on both the quality of your work and your responsiveness to feedback. Here is a list of those tasks:

- Propose a seminar topic. Your first task is to identify a topic for your paper; we will discuss the various topics in class.
- Prepare a paper outline, and submit it for peer discussion.
- Revise your outline and submit it for the instructor’s feedback. Your submission should include (a) the previous draft; (b) the revised draft; and (c) a short description of your responsiveness to the criticism on your work. The grade on your first paper will be based on both the quality of your work and your responsiveness to previous critiques.
- Prepare a first draft of your paper and submit it for peer discussion.
- Prepare a revised draft of your paper and submit it for the instructor’s feedback. Your submission should include (a) the previous draft; (b) the revised draft; and (c) a short description of your responsiveness to the criticism on your work. The grade on your first paper will be based on both the quality of your work and your responsiveness to previous critiques.
- Prepare a second draft of your paper and submit it for the instructor’s feedback. Your submission should include (a) the previous draft; (b) the revised draft; and (c) a short description of your responsiveness to the criticism on your work. The grade on your first paper will be based on both the quality of your work and your responsiveness to previous critiques.
- Prepare a final draft of your paper.

- **Final presentation.** Along with your final paper, you are asked to prepare a short (10-15 min) Powerpoint presentation of your final paper.

**Grading**

- Attendance and participation in class discussions (10%)
- Presentation of reading materials (20%)
- Final paper. The paper should be 8-10 pages long (double-spaced), formatted according to the APA guidelines (60%)
- Final Powerpoint presentation (10%).
A. The standard machinery for language

1 1/10 Introduction: What is language and why we have it?
   • Pinker, 1994 Chapter 1-2 (On Blackboard)
   • Wilson & Foglia, 2011

2 1/17 Concepts and combinatorial structure
   • Fodor (2001)
   • Jackendoff, 2002, Chapter 3
   • for the brave:
     o Fodor on combinatorial structure: Fodor & Pylyshyn, 1988 (On Blackboard)

3 1/24 Universal grammar
   • Jackendoff, 2002, Chapter 4
   • Lidz, Waxman, & Freedman, 2004
   • Culbertson & Adger, 2014

B: The challenges from mirror neurons/embodied cognition

4 1/31 Concepts
   • Pulvermüller & Hauk, 2006
   • Barsalou, Kyle Simmons, Barbey, & Wilson, 2003

5 2/7 Speech perception
   • Fadiga, Craighero, Buccino, & Rizzolatti, 2002
   • Pulvermüller et al., 2006
   • Galantucci, Fowler, & Goldstein, 2009

6 2/14 Iconcity
   • Dingemanse, Blasi, Lupyan, Christiansen, & Monaghan, 2015
   • Blasi, Wichmann, Hammarström, Stadler, & Christiansen, 2016
   • Kawahara, Noto, & Kumaga, 2016

7 2/21 No class (To be rescheduled)

C. Actions and reactions

8 2/28 The embodiment challenge: objects actions and re-actions
   • Vannuscorps & Caramazza, 2016
   • Mahon & Caramazza, 2008
   • Bedny & Caramazza, 2011 (On Blackboard)

9 3/14 The mirror neurons challenge
10 3/21 The Myth of the Mirror Neurons
   a. Hickok, 2014 Chapters 4-5

11 3/28 The embodied mind and brain
   o Hickok, 2014 Chapters 6, 7

12 4/4 Rules rule
   - Marcus, Vijayan, Bandi Rao, & Vishton, 1999
   - Marcus, 1998
   - Berent, Dupuis, & Brentari, 2014

13 4/11 Amodal language universals?
   - Mayberry, Lock, & Kazmi, 2002
   - Berent, Bat-El, Brentari, Dupuis, & Vaknin-Nusbaum, 2016
   - Strickland et al., 2015

TBA Amodal mind/brain
   - Emmorey, McCullough, Mehta, & Grabowski, 2014
   - Bedny, Pascual-Leone, Dodell-Feder, Fedorenko, & Saxe, 2011
<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Readings</th>
<th>Notes</th>
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<tbody>
<tr>
<td>2/7</td>
<td>Speech perception</td>
<td>Fadiga, Craighero, Buccino, &amp; Rizzolatti, 2002 Pulvermüller et al., 2006 Galantucci, Fowler, &amp; Goldstein, 2009</td>
<td>Paper topic due</td>
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<td>2/14</td>
<td>Iconicity</td>
<td>Dingemanse, Blasi, Lupyan, Christiansen, &amp; Monaghan, 2015 Blasi, Wichmann, Hammarström, Stadler, &amp; Christiansen, 2016 Kawahara, Noto, &amp; Kumaga, 2016</td>
<td>Outline due</td>
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<td>2/21</td>
<td>No class—to be rescheduled</td>
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<td>Revised outline due (on Blackboard)</td>
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<td>3/7</td>
<td>Spring break</td>
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<td>3/14</td>
<td>The mirror neurons challenge</td>
<td>Fogassi &amp; Ferrari, 2007 Hickok, 2014 Chapters 1-3</td>
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<tr>
<td>3/21</td>
<td>The Myth of the Mirror Neurons</td>
<td>Hickok, 2014 Chapters 4-5</td>
<td>Paper due (first draft)</td>
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<tr>
<td>3/28</td>
<td>The Myth of the Mirror Neurons</td>
<td>Hickok, 2014 Chapters 6, 7</td>
<td>Revised draft due (second draft)</td>
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<tr>
<td>4/4</td>
<td>Rules rule</td>
<td>Marcus et al., 1999 Marcus, 1998 Berent et al., 2014</td>
<td>Revised draft due (third draft, on Blackboard)</td>
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<tr>
<td>4/18</td>
<td>Final presentations</td>
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### Presentation schedule

<table>
<thead>
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<th>Date</th>
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Pulvermüller & Hauk, 2006  
Barsalou, Kyle Simmons, Barbey, & Wilson, 2003 | 7.  
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| 2/7 | Speech perception challenge: speech perception | Fadiga et al., 2002  
Pulvermüller et al., 2006  
Galantucci et al., 2009 | 10.  
11.  
12. |
| 2/14 | Iconcity | Dingemanse et al., 2015  
Blasi et al., 2016  
Kawahara et al., 2016 | 13.  
14.  
15. |
| 2/28 | The embodiment challenge: objects, actions and re-actions | Vannuscorps & Caramazza, 2016  
Mahon & Caramazza, 2008  
Bedny & Caramazza, 2011 | 16.  
17.  
18. |
| 3/14 | The mirror neurons challenge | Fogassi & Ferrari, 2007  
Hickok, 2014, Chapters 1-2  
Hickok, 2014, Chapters 3 | 19.  
20.  
21. |
| 3/21 | The Myth of the Mirror Neurons | Hickok, 2014, Chapters 4  
Hickok, 2014, Chapters 5 | 22.  
23. |
| 3/28 | The Myth of the Mirror Neurons | Hickok, 2014 Chapters 6  
Hickok, 2014 Chapters 7 | 24.  
25. |
| 4/4 | Rules rule | Marcus et al., 1999  
Marcus, 1998  
Berent et al., 2014 | 26.  
27.  
28. |
| 4/11 | Amodal language universals? | Mayberry, Lock, & Kazmi, 2002  
Berent, Bat-El, Brentari, Dupuis, & Vaknin-Nusbaum, 2016  
Strickland et al., 2015 | 29.  
30.  
31. |
| TBA | Amodal brain system | Newman et al., 2015  
Emmorey et al., 2014  
Bedny et al., 2011 |  |
| 4/18 | Final presentations | Final paper due |  |
References


