



Department of Psychology
PSY705 – Embodied Cognition – Instructor: Jake Kurczek – Spring 2013

Psychology 705: Embodied Cognition Seminar

A new mode: Mind in the body, body in mind

SH 104
Coe College
Department of Psychology

T/Th 12:30 – 1:50
Spring 2013

Instructor: Jake Kurczek
Office: Stuart 110
Phone: 319-399-8059
E-mail: jkurczek@coe.edu
Office Hours: T/TH: 10:30-12:30
and by appointment

Textbook: *None Required* – I may scan chapters from the following:
Shapiro, L. (2010). Embodied Cognition. New York: Routledge.

Class Website: You will be able to find PDFs of the lectures and discussions
posted on Moodle.

Course Goals and Overview

From the Course Catalogue:

Intensive study of a topic selected by the instructor. May be repeated for credit, provided the topics are substantially different. Prerequisite: Research Methods in Psychology (PSY-301) and either junior standing or consent of instructor.

Additional Notes:

Embodied cognition (EC), the view that the body plays a central role in shaping the mind, is gaining considerable traction in cognitive science (Wilson, 2002). At the heart of EC is the idea that high-level cognitive processes (e.g., memory, decision-making, language) are influenced by sensory, motor, and affective information from the body. The last ten years have seen an explosion of theory and research connected by the term “embodiment.” A typical claim of embodied theories is that many forms of cognition make use of perceptual/action systems. That is, cognition is not something that can be accomplished with abstract symbols outside of a body that interacts with the world. Our main goals are to understand this claim, examine evidence regarding this claim across multiple areas of psychology and application, and to determine if there can be a coherent, unified, embodied approach to understanding behavior.



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- To provide an opportunity to work through scientific controversies by analyzing, comparing and contrasting theories and research
- To provide an opportunity to work through the scientific process through writing an annotated bibliography and research proposal
- To practice and improve your writing and presentation skills

Course Requirements and Policies

1. **Prerequisites.** The prerequisite for this course is PSY 301. The Department of Psychology will check student records to confirm completion of the required course. Students who are registered for this course without meeting the prerequisite requirement will be administratively dropped.
2. **Course web page.** Lecture slides, assignments and readings are available on the course web page - moodle.
3. **Lecture Attendance.** Students are required and expected to attend all of the classes for this course. While I will not enforce a daily attendance policy, a failure to attend will reflect poorly in your attendance/question portion of your final grade.
4. **Absences and Make-ups.** Please do your best to attend every lecture. As a discussion based course, the presence of everyone is best in order to have lively discussions.
5. **Posting of Lectures.** PDF's of the lectures will be posted on the Moodle page for your reference. I will do my best to post any lecture material within 24 hours of class.
6. **Grading.** Grades will be based on the total points shown below. I will do my part to try to provide guidance for how the grading scale will approximate. In the event that overall grade averages are high, the scale will be no more strict than as follows:

A	93% and above	B-	80-82%	D+	67-69%
A-	90-92	C+	77-79%	D	63-66%
B+	87-89%	C	73-76%	D-	60-62%
B	83-86%	C-	70-72%	F	59% and below



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Grading Criteria:

Daily Reflections	= 100 pts	16.67%
Discussion Leader	= 100 pts	16.67%
Class Participation	= 100 pts	16.67%
Research Presentation	= 100 pts	16.67%
Annotated Bibliography	= 100 pts	16.67%
Final Paper	= 100 pts	16.67%
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Total	= 600 pts	100%

7. **Late Work.** Late assignments will be docked 10% for everyday after the assigned due date.

8. **Assignments.**

- Daily Reflections

For each day (starting week 2) I'd like you to write down your thoughts/reactions about the readings. These should include critical thoughts about the readings (e.g., what and why you agree or disagree with, what did you find interesting or confusing, etc.) rather than summaries. Post these to moodle the night before class so that I can (1) read them before class & (2) possibly assemble them all together, print them out and hand them out in class for all to see. - There are 13 weeks of these (26 opportunities). My plan is to take your top 20.

- Discussion Leader

Students will be expected to be the "discussion leader" for three different days of articles/topics distributed over the semester, beginning Week 2 – 1/24. The job of the discussion leader is to provide some structure to the discussion of the issues that week. This could be a powerpoint or handouts, sets of questions for discussion, etc. The point is not for the leader to do all of the talking that day, rather to facilitate discussion. Feel free to consult with me about this. - We'll use the articles/topics I've chose, but if you find a different (better??) article that you think would fit that week's topic you may submit it to me for possible substitution for an assigned article. I'll need these at least 1 week in advance for review and dissemination to the other students (and if the article is available in electronic format that would be helpful).

- Class Participation

This is a reading and discussion based course. I expect that everybody come to class having read the articles and put some thought into them. To facilitate the discussion (starting week 2), in addition to the reaction/reflection papers, I'd like everybody to come up with at least 2 questions about each of the readings and post these to moodle the night before class. The discussion leader for the day does not need to post questions to moodle the night before their presentation. Class participation will be based on active participation in the discussions and also the submission of these questions the night before class.



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- Annotated bibliography (AB)

I'd like you to search for additional related articles on one of the topics (that your research paper is on), read them, and prepare a brief (e.g., 1 paragraph to 1 page) summary, as well the full reference. You'll need a minimum of 11 articles included in the bibliography for full credit and these are due each week (starting week 3). You may select a topic for which you were a discussion leader, or select another topic. The assigned articles do not count towards the minimum 11 articles.

- Research Paper

The major project for this course is a 10-15 page research proposal paper. Your final paper will include an introduction (literature review and hypotheses) and a methods section. You do not need to conduct an actual research study. Think through (and write about) the proposed methodology, the theory and hypotheses, and your predictions. While an exhaustive literature review is not required, review is necessary for providing context in which to understand the proposed experiment(s), the theory which it is designed to test, and for backing up any underlying assumptions which underlie the hypotheses. Each time you turn something in, it should be in APA style. In writing each of the parts of this paper, and in writing other papers for this class, I strongly recommend that you use the checklist located at <http://www.public.coe.edu/wac/ChecklistMarquetWdAug02.html> as well as other resources available through Coe's writing center

On February 14th, you will turn in a 1-2 page paper that includes your research question and briefly describes at least 2 academic studies that you are using as a basis for your research question to your first writing partner. These should be returned within 1 week and be posted to moodle with track changes. While you only need to discuss 2 studies in your paper, you should include in the reference section at least 5 academic sources that you have reviewed and will use in your final paper.

On March 14th, you will turn in the first draft of the introduction of your paper (6 pages minimum) to your second writing partner. These should be returned within 1 week and be posted to moodle with track changes. In this draft, you should summarize relevant research studies and describe how these research studies support your hypotheses. You should include at least 12 academic sources in the reference section. You should also include an abstract. I will attempt to meet with everyone individually during the weeks of March 11th and March 18th.

By 5:00 on April 25th, you will turn in the final draft of your paper (10-15 pages). This paper should be a revised and improved edition of your abstract and your introduction as well as method section.

Your final paper will be graded using the following criteria:

- a) Identification of gaps in literature
- b) Summaries of supporting research studies
- c) Clear description of research proposal



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- d) Quality of research method proposed
- e) APA style

- Research Presentation

Psychology conferences typically host symposium sessions, in which researchers construct talks to present their research findings from a recent study or studies. The last week of class, April 29th, will consist of an academic symposium. During the session, each student will present a powerpoint slideshow describing their research proposal that they have developed over the course of the semester. The presentation should include the following: literature review, hypotheses, method, references. Each presentation should be 10 minutes with 5 minutes for questions. A graph of expected results would be especially helpful! You should post your presentations to moodle by April 25th.

The presentations will be graded using the following criteria:

- a) Clear description of research proposal
- b) Overall attractiveness of poster and information presented
- c) Oral description to audience

9. **Cell phones, etc.** Please turn off or silence all electronic devices during class. I will remember to do the same.

10. **Students with disabilities.** If you need any special accommodations due to a disability, please see me after class and/or contact the **Academic Achievement Program (Phone: x8547)**. Reasonable and appropriate accommodations will be arranged.

11. **Getting Help.** If you find that you are having difficulties with any of the material please contact me as soon as possible! Do not wait until late in the course. It is difficult to significantly improve your grade if there is only a few weeks left in the course. I am happy to help you. If you are not able to see me during office hours we can make other arrangements. Tutoring is available through the [Academic Achievement Program](#) (Phone: x8547).

12. **Academic Integrity.** At Coe College, we expect academic integrity of all members of our community. Academic integrity assumes honesty about the nature of one's work in all situations. Such honesty is at the heart of the educational enterprise and is a precondition for intellectual growth. Academic dishonesty interferes with the mission of the College and will be treated with the utmost seriousness as a violation of community standards.

Cheating, plagiarism, deliberately impeding other students' work and misuse of common academic property, in the libraries, labs, and elsewhere are all forms of academic dishonesty and will be subject to one or more of the following sanctions:



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- 1) failure of the assignment, i.e. exam, paper, lab report, etc.
- 2) failure of the class
- 3) suspension or expulsion

Important Dates

Discussion Leader Sign-up	January 17 th
Topics Due	January 31 st
First Draft Introduction	February 14 th
Spring Break	March 2 nd – 10 th
Daylight Savings	March 10 th
First Draft Paper	March 14 th
Coe Research Symposium	April 18 th
Final Paper Due:	April 25 th
Presentations Due:	April 25 th
Presentations:	April 30 th , May 2 nd
Final/Class Evaluation	May 7 th 8:00 AM

Schedule of Lecture Topics and Assigned Readings*

Date	Topic & Assignment	Readings
Week 1	<i>Traditional Cognitive Science</i>	
January 15	Introduction	
January 17		Newell, A. & Simon, H. A. (1976). Computer Science as Empirical Inquiry: Symbols and Search. <i>Communications of the ACM</i> , 19, 113-126. Searle, J. R. (1980), Minds, Brains, and Programs. <i>Behavioral and Brain Sciences</i> , 3, 417-457.
Week 2	<i>Philosophy</i>	
January 22		Beer, R., (2011). Dynamical systems and embedded cognition. In K. Frankish, & W. Ramsey (Eds.), <i>The Cambridge Handbook of Artificial Intelligence</i> . Cambridge: Cambridge University Press. Gallagher, S. (2009). Philosophical antecedants to situated cognition. In P. Robbins, & Aydede, M. (Eds). <i>Cambridge Handbook of Situated Cognition</i> .



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		Cambridge: Cambridge University Press.
January 24	Discussion Leader Starts	Garbarini, F., & Adenzatio, M. (2004). At the root of embodied cognition: Cognitive science meets neurophysiology. <i>Brain and Cognition</i> , 56, 100-106. Zlatev, J. (2007) Embodiment, language, and mimesis. In Ziemke, T, Zlatev, J., and Frank, R. Body, Language and Mind: Vol 1 Embodiment. Berlin, Mouton.
Week 3	<i>Grounded Cognition</i>	
January 29	Topics Due	Anderson, M. (2003). Embodied Cognition: A field guide. <i>Artificial Intelligence</i> , 149(1), 91-130. Barsalou, L. (2008). Grounded Cognition. <i>Annual Review of Psychology</i> , 59, 617-645.
January 31	AB1	Shapiro, L. (2007). The embodied cognition research program. <i>Philosophy Compass</i> , 2, 338-346. Wilson, M. (2002). Six Views of Embodied Cognition. <i>Psychonomic Bulletin & Review</i> , 9, 625–636.
Week 4	<i>Perception and Action</i>	
February 5		Barsalou, L. W. (1999). Perceptual symbol systems. <i>Behavioral and Brain Sciences</i> , 22, 577-660. Chiel, H. & Beer, R. (1997). The brain has a body: Adaptive behavior emerges from interactions of nervous system, body and environment. <i>Trends in Neuroscience</i> , 20(12), 554 – 557.
February 7	AB2	Glenberg, A. & Kaschak, M. (2002). Grounding language in action. <i>Psychonomic Bulletin & Review</i> , 9, 558-565. Markman, A. B., and Brendl, C. M. (2005). Constraining theories of embodied cognition. <i>Psychological Science</i> , 16, 6-10.
Week 5	<i>Morality</i>	
February 12		Helzer, E. & Pizarro, D. (2011). Dirty Liberals!: Reminders of physical cleanliness influence moral and political attitudes. <i>Psychological Science</i> , 22(4), 517-522. Schnall, S., Haidt, J., Clore, G., & Jordan, A. (2008). Disgust as embodied moral judgment. <i>Perspectives of Social Psychology Bulletin</i> , 34(8), 1096-1109.



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February 14	First Draft Introduction AB3	Zhong, C. & Liljenquist. (2006). Washing away your sins: Threatened morality and physical cleansing. <i>Science</i> , 313, 1451-1453. Zhong, C., Strejcek, B., & Sivanathan, N. (2010). A clean self can render harsh moral judgment. <i>Journal of Experimental Social Psychology</i> , 46, 850-862.
Week 6	<i>Concepts</i>	
February 19		Louwerse, M. & Jeuniaux, P. (2010). The linguistic and embodied nature of conceptual processing. <i>Cognition</i> , 114, 96-104. Martin, A. (2007). The representation of object concepts in the brain. <i>Annual Review of Psychology</i> , 58, 25-45.
February 21	AB4	Patterson, K., Nestor, P. & Rogers, T. (2007). Where do you know what you know? The representation of semantic knowledge in the human brain. <i>Nature Reviews Neuroscience</i> , 8, 976-988. Pecher, D., Boot, I., & Dantzig, S. (2011). Abstract concepts: Sensory-motor grounding, metaphors and beyond. <i>Psychology of Learning and Motivation</i> . Elsevier.
Week 7	<i>Metaphor</i>	
February 26		Camp, E. (2006). Metaphor in the mind: The cognition of metaphor. <i>Philosophy Compass</i> , 1, 154-170. Fauconnier, G., & Turner, M. (). Rethinking Metaphor. In R. Gibbs (Ed.). <i>Cambridge Handbook of Metaphor and Thought</i> . Cambridge: Cambridge University Press.
February 28	AB5	Gibbs, R. (2006). Metaphor interpretation as embodied simulation. <i>Mind and Language</i> , 21(3), 434-458. Lakoff, G. (1992). The contemporary theory of metaphor. In A. Ortony (Ed.) <i>Metaphor and Thought</i> . Cambridge: Cambridge University Press.
Week 8	<i>SPRING BREAK!!</i>	
Week 9	<i>Temporal and Spatial Language</i>	



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March 12		<p>Boroditsky, L. (2000). Metaphoric structuring: Understanding time through spatial metaphors. <i>Cognition</i>, 75, 1-28.</p> <p>Casasanto, D. (2008). Similarity and proximity: When does close in space mean close in mind? <i>Memory & Cognition</i>, 36(6), 1047-1056.</p>
March 14	First Draft Paper AB6	<p>Casanto, D., & Boroditsky, L. (2008). Time in the mind: Using space to think about time. <i>Cognition</i>, 106, 579-593.</p> <p>Kranjec, A., & Chatterjee, A. (2010). Are temporal concepts embodied? A challenge for cognitive neuroscience. <i>Frontiers in Psychology</i>, 1, 1-9.</p>
Week 10	<i>Language and Gesture</i>	
March 19		<p>Beilock and Goldin-Meadow (2010). Gesture changes thought by grounding it in action. <i>Psychological Science</i>, 21, 1605-1610.</p> <p>Goldin-Meadow and Beilock (2010). Action's influence on thought: The case of gesture. <i>Perspectives on Psychological Science</i>, 5, 664-674.</p>
March 21	AB7	<p>Singer, M. & Goldin-Meadow, S. (2005). Children learn when their teacher's gestures and speech differ. <i>Psychological Science</i>, 16(2), 85-89.</p> <p>Willems, R. & Hagoort, P. (2007). Neural evidence for the interplay between language, gesture, and action: A review. <i>Brain and Language</i>, 101(3), 278-289.</p>
Week 11	<i>Memory</i>	
March 26		<p>Casasanto, D., & Dijkstra, K. (2010). Motor action and emotional memory. <i>Cognition</i>, 115, 179-185.</p> <p>Glenberg, A. M. (1997). What memory is for. <i>Behavioral and Brain Sciences</i>, 20, 1-55.</p>
March 28	AB8	<p>Postle, B. R. (2006). Working memory as an emergent property of the mind and brain. <i>Neuroscience</i>, 139, 23-38.</p> <p>Theeuwes, J., Olivers, C. N. L., & Chizk, C. L. (2005). Remembering a location makes the eyes curve away. <i>Psychological Science</i>, 16, 196-199.</p>
Week 12	<i>Social Cognition</i>	
April 2		Barsalou, L.W., Niedenthal, P.M., Barbey, A., & Ruppert,



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		<p>J. (2003). Social embodiment. In B. Ross (Ed.), <i>The Psychology of Learning and Motivation</i>, Vol. 43 (pp. 43-92). San Diego: Academic Press.</p> <p>Gallese, V., Keysers, C., & Rizzolatti, G. (2004). A unifying view of the basis of social cognition. <i>Trends in Cognitive Science</i>, 8, 396-403.</p>
April 4	AB9	<p>Wolpert, D. M., Doya, K., & Kawato, M. (2003). A unifying computational framework for motor control and social interaction. <i>Philosophical Transactions of the Royal Society of London, B</i>, 358, 593-602.</p> <p>Zhong, C. & Leonardelli, G. (2008). Cold and Lonely: Does social exclusion literally feel cold? <i>Psychological Science</i>, 19(9), 838-842.</p>
Week 13	<i>Emotion</i>	
April 9		<p>Goldman, A. & Vignemont, F. (2009). Is social cognition embodied? <i>Trends in Cognitive Science</i>, 13(4), 154 – 159.</p> <p>Niedenthal, P. M. (2007). Embodying emotion. <i>Science</i>, 316, 1002-1005.</p>
April 11	AB10	<p>Havas, D. A., Glenberg, A. M., & Rinck, M. (2007). Emotion simulation during language comprehension. <i>Psychonomic Bulletin & Review</i>, 14, 436-441.</p> <p>Wilkowski, B., Meier, D., Robinson, M., Carter, M., & Feltman, R. (2009). “Hot-headed” is more than an expression: The embodied representations of anger in terms of heat. <i>Cognition</i>, 9(4), 864-877.</p>
Week 14	<i>Work Week</i>	
April 16	AB11	Jake at CNS – Class Cancelled – Work on Papers
April 18	Coe Research Symposium	Classes Cancelled
Week 15	<i>Embodiment in the Wild</i>	
April 23		<p>Ackerman, J., Nocera, C., & Bargh, J. (2010). Incidental haptic sensations influence social judgments and decisions. <i>Science</i>, 328, 1712-1715.</p> <p>Chartrand, T., & Bargh, J. (1999). The chameleon effect: The perception-behavior link and social interaction. <i>Journal of Personality and Social Psychology</i>, 76(6), 893-910.</p>



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April 25	Final Draft Paper Presentation	Jostmann, N., Lakens, D., & Schubert, T. (2009). Weight as embodiment of importance. <i>Psychological Science</i> , 20(9), 1169-1174. Williams, L. & Bargh, J. (2008). Experiencing physical warmth promotes interpersonal warmth. <i>Science</i> , 322, 606-607.
Week 16	<i>Presentations</i>	
April 30		
May 2		
Week 17	<i>Final</i>	
May 7	Final Day	Breakfast and fill out class evaluation

*Tentative schedule subject to change without notice as instructor deems necessary