CS8893 A
Topic: Cognition and Culture

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DESCRIPTION

There is a growing movement in the cognitive and social sciences towards developing an integrated understanding of humans as cognitive, social, cultural, tool-using agents. This movement comprises research in cognitive psychology, computing, philosophy, neuroscience, anthropology, and sociology. Much of this research is interdisciplinary in nature, and studies various aspects of human behavior in complex social and material environments, especially technological. A central claim of proponents of an "environmental" perspective on human cognition and behavior is that such an integrated view is necessary for understanding what it means to be a human acting in the world which has a range of implications including for designing technologies for human use – from games to assistive technologies – and for designing intelligent systems to mimic, study, or interact with humans. In this course we will consider the nature and status of the claim by examining research from several environmental perspectives.

REQUIREMENTS

There will be a significant amount of reading - approximately 150 pages per week. All students, including those registered for "p/f" and "audit" credit, will participate in joint presentations. Those students registered for a grade will do a research paper on a problem of their design related to the theme and readings of the course.

Presentations: In keeping with the cognitive science research on learning that establishes that students learn more effectively when engaged with meaningful problems, the course will be run in discussion format based on student formulated problems with me and Miles helping to facilitate. Presentations will be made in groups of students weekly. Please do not simply summarize the readings. The objective is to help the class discuss both what the author has presented as problems and has argued and what problems or issues arise from it based on the class members' knowledge and interests. Presentations should have two parts: 1. Specify and address what you take to be the main problems of the author(s) and their proposed solutions and 2. Provide a set of problems formulated by your group for discussion. Try to think of the readings as a whole, and if there are multiple authors, attempt a problem formulation that encompasses them, as well as what you see as the problem of the individual authors. Please

provide a handout (with your names written on it) to me and the class with the author problem formulations and a list of the problems for discussion.

Please only use your computer if you are taking notes related to the discussion. All students should bring a copy of the reading to class to refer to during discussion.

REQUIRED BOOKS

Books are located in the **Engineer's Bookstore**.

Edwin Hutchins, *Cognition in the Wild,* MIT Press
Jean Lave - *Cognition in Practice,* Cambridge University Press
Bradd Shore - *Culture in Mind: Cognition, Culture, and the Problem of Meaning*, Oxford University Press
Michael Tomasello - *The Cultural Origins of Human Cognition*, Harvard University Press
L. S. Vygotsky - *Mind in Society: The Development of Higher Psychological Processes*, Harvard University Press

SCHEDULE

Selections for the week are listed in the optimal order for reading. Read the entire assignment for the week before the class meeting.

Week 1: 8/21 Introduction

BACKGROUND

Week 2: 8/28 (T-square)

Behaviorism: J. B. Watson; Skinner

"First wave" cognitive science: Miller et al.; Newell (selection)

DEVELOPMENT, LEARNING, & BRAIN

Week 3: 9/4 (t-square) Donald
(optional TED talk)

Week 4: 9/11 Vygotsky: Chapters 1-6

Week 5: 9/18 Tomasello: Chapters 1-3
(optional TED talk)

Week 6: 9/25 Tomasello: Chapters 4, 7, Murray

Week 7: 10/2 (T-square) (T-square) Ramachandran; Knoblich; Gallese 1998; Gallese 2004; Decety & Jackson
(Optional TED talk)

CULTURAL MODELS

Week 8: 10/9 (T-square) Lakoff & Johnson

Week 9: 10/16 Fall break

Week 10: 10/23 Shore: Chapters 1-3 MEET in R225

Week 11: 10/30 Shore: Chapters 9, 10, 13, epilogue

COGNITION & CULTURE IN PRACTICE

Week 12: 11/6 Lave: Chapters 1-4, 8

Week 13: 11/13 Hutchins: Chapters 9, 1-3

Week 14: 11/20 Hutchins: Chapters 4-8

Week 15: 11/27 research presentations

Week 16: 12/4 research presentations

Monday12/10, noon **PAPERS DUE**

Bibliography of Articles/Selections

Decety, J., Jackson, P.L. (2006). A social-neuroscience perspective on empathy. Current Directions in Psychological Science, 15(2), 54-58

Donald, M. (1991). Chapters 1, 5, 6. Origins of the Modern Mind. Cambridge, MA: Harvard.

Gallese, V., Keysers, C., Rizzolatti, G. A (2004) Unifying View of the basis of Social Cognition. Trends in Cognitive Science. 8(9):396–403.

Gallese,V., Goldman, A. (1998). Mirror Neurons and the simulation theory of mind reading, Trends in Cognitive Sciences, 2(12), 493-501.

Knoblich, G., Sebanz, N. (2006). The social nature of perception and action. Current Directions in Psychological Science, 15, 99-104

Lakoff, G., Johnson, M. (1998) Chapters 3-6, Philosophy in the Flesh: The Embodied Mind and Its Challenge to Western Thought. NY: Basic Books.

Miller, G. A., Galanter, E., Pribram, K. H. (1986) Chapters 1, 2, 4. Plans and the Structure of Behavior. pp.5-71. NY: Adams-Bannister-Cox.

Murray, J. H. (2006) Toward a cultural theory of gaming: Digital games and the co-evolution of media, mind, and culture. Popular Communication, 4(3):185–202.

Newell, A., (1980) Physical symbol systems. Cognitive Science, 4:135–183 (selection).

Skinner, B.F. (1971). Beyond Freedom & Dignity. Indianapolis/Cambridge: Hackett Publishing Company, Inc., pp. 184 – 215.

Watson, J. B. (1913). Psychology as the Behaviorist Views It. Psychological Review, 20, 158-177.

Ambady, N., Bernieri, F.J., and Richeson, J.A. (2000). Towards a histology of social behavior: Judgmental accuracy from thin slices of the behavioral stream, *Advances in Experimental Social Psychology*, 32, 201-271.

Decety, J., Jackson, P.L. (2006). A social-neuroscience perspective on empathy. *Current Directions in Psychological Science*, 15(2), 54-58

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Knoblich, G. and Sebanz, N. (2006). The social nature of perception and action. *Current Directions in Psychological Science*, 15, 99-104

G. Lakoff and M. Johnson. Chapters 3-6, *Philosophy in the Flesh: The Embodied Mind and Its Challenge to Western Thought*. Basic Books, December 1998.

G. A. Miller, E. Galanter, K. Pribram, Chapters 1, 2, 4, *Plans and the Structure of Behavior*, Holt, Reinhart, & Winston, NY. 1960

A. Newell. Physical symbol systems. *Cognitive Science*, 4:135–183, 1980.(selection)

B. F. Skinner. Chapter 9, *Beyond Freedom and Dignity* (1971), reprinted Hackett Publishing Company, Cambridge, MA, 2002

J. B. Watson. Psychology as the behaviorist views it, *Psychological Review*, 20:158-177, 1913