

Psychology 479

Perceptual Bases of Knowledge, Language, and Thought

Lawrence W. Barsalou

Graduate Reading Seminar

Meets one hour a week
Fall, Winter, and Spring quarters, 1994-95

100 units total
(must attend all three quarters)

Thursdays 12:00-1:00
Green 117

This seminar will review work from the cognitive sciences that addresses perceptual mechanisms in higher-level cognition. Topics likely to be discussed include:

- psychological research on mental imagery, concepts, language, and memory
- cognitive linguistics research on image schemata and metaphor
- artificial intelligence research on perceptual computation
- philosophical analyses of perceptual versus non-perceptual symbolic systems

At each meeting, we will typically discuss a single article read by all seminar members. On a rotating basis, each member will be responsible for summarizing and critiquing papers to initiate discussion. The readings for a given quarter will be available from a local copy center at the start of the quarter. Papers for the winter and spring quarters will be selected by participants during the previous quarter(s). Following the fall and winter quarters, no credit or grades will be given. Full credit for participating all three quarters will be given following spring quarter. Students are encouraged to take the seminar P/F, with those taking it for a grade required to write a paper. For further information, contact Larry Barsalou, L-Barsalou@uchicago.edu, 2-4193.

Fall Quarter Readings

Available after 9/26/94 at the Social Sciences Copy center, SS 103, for \$40.50.
Please read the Sheets-Johnstone article for the first meeting on 10/6.

- 10/6 Sheets-Johnstone, M. (1994). Precise of: *The roots of thinking*. Philadelphia: Temple University Press. *Psychology*, 94.5.08. *evolution-thinking.1.sheets-johnstone*.
- 10/13 Barwise, J., & Etchemendy, J. (1991). Visual information and valid reasoning. In W. Zimmerman & S. Cunningham (Eds.), *Visualization in mathematics* (9-24). Washington: Mathematical Association of America.
- 10/20 Glasgow, J.I. (1993). The imagery debate revisited: A computational perspective. *Computational Intelligence*, 9, 309-333. [Also Narayan's preface (303-308) and Glasgow's reply to commentators (424-435)]
- 10/27 Talmy, L. (1983). How language structures space. In H. Pick & L. Acredelo (Eds.), *Spatial orientation: Theory, research, and application* (225-282). New York: Plenum Press.
- 11/3 Jackendoff, R. (1987). On beyond zebra: The relation of linguistic and visual information. *Cognition*, 26, 89-114.
- 11/10 Potter, M.C., Kroll, J.F., Yachzel, B., Carpenter, E., & Sherman, J. (1986). Pictures in sentences: Understanding without words. *Journal of Experimental Psychology: General*, 115, 281-294.
- 11/17 Glaser, W.R. (1992). Picture naming. *Cognition*, 42, 61-106.
- 11/? Chambers, D., & Reisberg, D. (1992). What an image depicts depends on what an image means. *Cognitive Psychology*, 24, 145-174.
- 10/1 Wilson, S.G., Rinck, M., McNamara, T.P., Bower, G.H., & Morrow, D.G. (1993). Mental models and narrative comprehension: Some qualifications. *Journal of Memory and Language*, 32, 141-154.
- 10/8 Tippett, L.J. (1992). The generation of visual images: A review of neuropsychological research and theory. *Psychological Bulletin*, 112, 415-432.

Winter Quarter Readings

Available after 1/2/95 at the Social Sciences Copy center, SS 103.

- 1/5 Barsalou, L.W. (1993). Structure, flexibility, and linguistic vagary in concepts: Manifestations of a compositional system of perceptual symbols. In A.C. Collins, S.E. Gathercole, & M.A. Conway (Eds.), *Theories of memory* (29-101). London: Lawrence Erlbaum Associates.
- 1/12 Glenberg, A. (almost in press). What memory is for. *Behavioral and Brain Sciences*.
- 1/17 Mandler, J.M. (1992). How to build a baby: II. Conceptual primitives. *Psychological Review*, 99, 587-604.
- 1/24 Ullman, S. (1984). Visual routines. *Cognition*, 18, 97-160.
- 2/7 Edelman, G.M., & Reeke, G.N, Jr. (1990). Is it possible to construct a perception machine? *Proceedings of the American Philosophical Society*, 134, 36-73.
- 2/14 Pylyshyn, Z.W. (1973). What the mind's eye tells the mind's brain: A critique of mental imagery. *Psychological Bulletin*, 80, 1-24.
- 2/21 Pylyshyn, Z.W. (1981). The imagery debate: Analogue media versus tacit knowledge. *Psychological Review*, 88, 16-45.
- 2/28 Tarr, M.J., & Pinker, S. (1989). Mental rotation and orientation-dependence in shape recognition. *Cognitive Psychology*, 21, 233-282.
- 3/7 Tarr, M.J., & Pinker, S. (1990). When does human object recognition use a viewer-centered reference frame? *Psychological Science*, 1, 253-256.
Johnson, S.H. (1991). Commentary on Tarr and Pinker. *Psychological Science*, 2, 205-206.
Tarr, M.J., & Pinker, S. (1991). Orientation-dependent mechanisms in shape recognition: further issues *Psychological Science*, 2, 207-209.
McMullen, P.A., & Farah, M.J. (1991). Viewer-centered and object centered representations in the recognition of naturalistic line drawings. *Psychological Science*, 2, 275-277.
- 3/14 Biederman, I., & Cooper, E.E. (1992). Size invariance in visual object priming. *Journal of Experimental Psychology: Human Perception and Performance*, 18, 121-133.
Biederman, I., & Cooper, E.E. (1992). Evidence for translational and reflectional invariance in visual object priming. *Perception*, 20, 585-593.
- 3/21 Biederman, I., & Gerhardstein, P.C. (1993). Recognizing depth-rotated objects: Evidence and conditions for three-dimensional viewpoint invariance. *Journal of*

Experimental Psychology: Human Perception and Performance, 19, 1162-1182.

Spring Quarter Readings

Available by 3/27/95 at the Social Sciences Copy center, SS 103.
Please read the Lakoff article for the first meeting.

- March 30 Lakoff, G. (1988). Cognitive semantics. In U. Eco, M. Santambrogio, & P. Violi (Eds.), *Meaning and mental representations* (pp. 119-154). Bloomington, IN: Indiana University Press.
- April 6 Donald, M. (1993). Precis of "Origins of the modern mind: Three stages in the evolution of culture and cognition." *Behavioral and Brain Sciences*, 16, 739-791.
- April 13 Goodman, N. (1976). *Languages of art* (pp. 3-43). Indianapolis, IN: Hackett.
- April 20 Talmy, L. (1988). Force dynamics in language and cognition. *Cognitive Science*, 12, 49-100.
- April 27 Schwanenflugel, P.J., Fabricius, W.V., Noyes, C.R., Bigler, K.D., & Alexander, J.M. (1994). The organization of mental verbs and folk theories of knowing. *Journal of Memory and Language*, 33, 376-395.
- May 4 Fauconnier, G., & Turner, M. (1994). Conceptual projection and middle spaces. *Cognitive Science Technical Report 9401*, University of California, San Diego.
- May 11 Landau, B., & Jackendoff, R. (1993). "What" and "where" in spatial language and spatial cognition. *Behavioral and Brain Sciences*, 16, 217-265.
- May 18 Carlson-Radvansky, L.W., & Irwin, D.E. (1994). Reference frame activation during spatial term assignment. *Journal of Memory and Language*, 33, 646-671.
- May 25 Logan, G. (in press). Linguistic and conceptual control of visual spatial attention. *Cognitive Psychology*.
- June 1 Klatzky, R.L., Pelligrino, J.W., McCloskey, B.P., & Doherty, S. (1989). The role of motor representations in semantic sensibility judgments. *Journal of Memory and Language*, 28, 56-77.