

# Causation in the Mind and in Language

LSA.305  
Linguistics Institute 2007  
Stanford University  
Summer 2007

## Time and Place

Mondays/Thursdays: 8:00 – 9:45  
Rm: Education (Cubberley) 130

## Instructor Information

Instructor: Phillip Wolff  
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Office hours: Monday/Thursdays, 10-11:00 and by appointment

## Course Description

This course will cover theories of causation from the psychological, philosophical, computer science, and linguistic literatures. It will also examine the potential implications of these theories for the meaning of causal expressions and for theories of argument realization. The course will emphasize recent developments in computer science and psychology on Bayesian network models, counterfactual reasoning, and force dynamics. In addition, the course will cover various behavioral and statistical techniques that can be used to explore the semantics of causal expressions (e.g., multi-dimensional scaling). The course will follow a lecture/discussion format and will be taught at an introductory level.

## Format

The course will be conducted as a lecture / seminar. Students will be expected to read the assigned papers, write reaction papers and write an end-of-class paper. Details are provided below.

## Course Materials

Articles will be put on [coursework.stanford.edu](http://coursework.stanford.edu).

## Course Requirements

**Class preparation and participation.** Students should be sure to read every assigned article carefully prior to class. If possible, bring a printout of the assigned reading(s) to class.

**Tickets.** For each class, students must turn in a “ticket.” The tickets should have two parts: a comment and a question. Ask good questions, that is, questions whose answers (if known) would be consequential. In formulating your ticket, you might begin with an observation (the comment part), then raise a question. Alternatively, you might begin with a question, and then propose an answer. Your tickets should be 120 words or less and turned in at the end of class. Be prepared to read your comments and questions. Your tickets will be graded as either submitted or unsubmitted.

**Course paper.** If you are taking the seminar for a grade, you will need to write a class paper which will be due the last day of class. The paper should be “thesis-driven.” Start the paper by identifying a problem or question (~ 1 paragraph). Then state your thesis. A thesis is signaled by a statement like “In this paper I will argue that...” Once you state your thesis, you should then briefly outline how you plan to defend your thesis. The rest of the paper should constitute your defense and final conclusions. Your defense should cite studies and theories from the literature.

In your class paper, you need not go beyond the readings covered in the course. The class paper must address an issue in causal cognition or in the linguistic expression of causation. The paper will provide you with an opportunity to synthesize the readings covered during the course.

Papers should be approximately 3 pages long and should have 1.5 spacing, 1 inch margins, and should be in 12 point Times-Roman font (or 11 point Arial). The paper should also include citations and references. Papers not meeting these style requirements will be returned ungraded. Be sure to provide subheadings.

Final papers are due the last day of class, July 26. Papers will be graded on the following dimensions: 1) thesis quality, 2) logical coherence, and 3) written presentation.

### **Grades**

Your class grade will be based on your tickets (60%), class paper (30%), and class participation (10%).

### **Schedule and Assigned Readings**

<u>Date</u>	<u>Topic</u>	<u>Reading</u>
July 5	Causation in within and between languages	Wolff, Klettke, Ventura, & Song (2005) Lakoff & Johnson (1999)
July 9	Theories of causation I	Hume (2000) Wolff (2007)
July 12	Theories of causation II	Gopnik, et al. (2004) Spellman & Mandel (1999)
July 16	Causal agents Causation by absence Causal chains	Goldvarg & Johnson-Laird (2001) Barbey & Wolff (2007) Schaffer (2004)
July 19	Complex predicates Direct causation Event individuation	Wolff (2003) Song & Wolff (2004)
July 23	Physical versus Social causation Causation across languages	Shibatani & Pardeshi (2002)
July 26	Causation and Argument realization	Croft (1998) Levin & Rappaport Hovav (2005)

## Reference List

- Barbey, A., & Wolff, P. (2007; in press). Learning causal structure from reasoning. In *Proceedings of the Twenty-Ninth Annual Conference of the Cognitive Science Society*. Hillsdale, NJ: Erlbaum.
- Croft, W. (1998). Event structure and argument linking. In M. Butt and W. Geuder (eds.) *The Projection of Arguments: Lexical and Compositional Factors (21-63)*. Stanford: CSLI Publications.
- Goldvarg, E. & Johnson-Laird, P. (2001). Naive causality: a mental model theory of causal meaning and reasoning. *Cognitive Science*, 25, 565-610.
- Gopnik, A., Glymour, C., Sobel, D., Shulz, L., Kushnir, T. & Danks, D. (2004). A theory of causal learning in children: Causal maps and Bayes nets. *Psychological Review*, 111, 1-31.
- Hume, D. (2000). A treatise of human nature (David Fate Norton and Mary J. Norton, Eds.). Oxford: Oxford University Press. [read Secs.14, 15, viz., Of the Idea of Necessary Connection; Rules By Which to Judge of Cause and Effect).
- Lakoff, G., & Johnson, M. (1999). *Philosophy and in the flesh: Chapter 11, Events and Causes* (pp. 170 – 234). New York, NY: Basic Books.
- Levin, B., & Rappaport Hovav, M. (2005). *Argument realization: Chapter 4, Three conceptualizations of events*. New York, NY: Cambridge University Press.
- Song, G., & Wolff, P. (2004). Linking perceptual properties to linguistic expressions of causation. In M. Achard & S. Kemmer (eds.), *Language, Culture, and Mind*. Stanford, CA: CSLI Publications.
- Shibatani, M., & Pardeshi, P. (2002). The causative continuum. In M. Shibatani (ed.), *The Grammar of Causation and Interpersonal Manipulation* (pp. 85 – 126). Philadelphia, PA: John Benjamins Publishing Company.
- Schaffer, J. (2004). Causes Need Not be Physically Connected to their Effects: The Case for Negative Causation. In Hitchcock (Ed.), *Contemporary Debates in Philosophy of Science* (pp. 197-216). Basil Blackwell
- Spellman, B. A., & Mandel, D. R. (1999). “When possibility informs reality: Counterfactual thinking as a cue to causality, “ *Current Directions in Psychological Science*, 8, 120-123.
- Wolff, P., Klettke, B., Ventura, T., & Song, G. (2005). Categories of causation across cultures. In W. Ahn, R. L., Goldstone, B. C., Love, A. B., Markman, & P. Wolff (Eds.), *Categorization inside and outside of the lab: Festschrift in honor of Douglas L. Medin* (pp. 29-48). Washington, DC: American Psychological Association.
- Wolff, P. (2003). Direct causation in the linguistic coding and individuation of causal events. *Cognition*, 88, 1-48.
- Wolff, P. (2007). Representing causation. *Journal of Experimental Psychology: General*, 136, 82-111.
- Woodward, J. (2006). Sensitive and insensitive causation. *Philosophical Review*, 115, 1-50.