

Cognitive Science, Philosophy 311
Language and the Infinite Mind
Tues. 3:10pm-6:10pm
Blodgett Hall 201
Spring 2009 Syllabus and Reading Schedule

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and by appointment.

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What does the structure of language, and our ability to acquire it, reveal about the human mind? How does the structure of language and the particular languages we know influence the way in which we think about and categorize the non-linguistic world around us? These are questions that extend back to antiquity in the philosophical domain. Yet, sitting back in an armchair using a mixture of self-reflection and preconceived doctrines is hardly the best method for answering such questions. Instead, we will look at a wide range of empirical work in linguistics and cognitive science that at least begins to show us how to answer these questions. Topics will include whether knowledge of language arises from interaction between linguistic experience and a domain-specific learning mechanism admitting of a limited range of parameter-settings (UG) or from general learning mechanisms; the extent to which human concepts precede or antecede the acquisition of language; and the relationship of language to spatial cognition, numerical knowledge, and counterfactual reasoning.

Format: All readings will be posted on Blackboard. Students are responsible for completing all readings for the week prior to seminar meetings, and for enough mastery of the readings to contribute to a fruitful two-hour discussion of it. Instructors will preview the following week's material in the final hour of the seminar.

Requirements: Discussion-leading in groups, graded (10%). Regular, graded short writing assignment (about five total) (30%). Final research paper of your choosing (50%). Regular, quality participation in discussion (10%).

Reading Schedule

Week 1: Jan. 27th **The Universal Grammar Model**

Laurence, Stephen and Margolis, Eric. (2001) The Poverty of the Stimulus Argument. *British Journal for the Philosophy of Science*. 2001.

Week 2: Feb. 3rd **Arguments for UG**

Crain, Stephen and Thornton, Rosalind. (forthcoming) Acquisition of Syntax and Semantics, in Traxler, M and Gernsbacher, M, editors, *Handbook of Psycholinguistics* Elsevier.

Crain, Stephen, Goro, Takuya, and Minai, Utako. (forthcoming) Hidden Units in Child Language, *ILCC Proceedings*. John Benjamins.

Crain, Stephen, Goro, Takuya, and Thornton, Rosalind. (2006) Language Learning is Language Change. *Journal of Psycholinguistic Research* Volume 35(1).

Week 3: Feb. 10th **Evidence from Signing and Creoles**

Goldin-Meadow, Susan, and Mylander, Carolyn. (1998) Spontaneous sign systems created by deaf children in two cultures. *Nature*. Vol 391(6664), pp. 279-281.

Senghas, Ann, Kita, Sotaro, and Ozyurek, Asli. (2004) Children Creating Core Properties of Language: Evidence from an Emerging Sign Language in Nicaragua. *Science*. Vol 305(5691), pp. 1779-1782.

Singleton, Jenny L., and Newport, Elissa L. (2004) When learners surpass their models: The acquisition of American Sign Language from inconsistent input. *Cognitive Psychology*. Vol 49(4), pp. 370-407.

Kam, Carla L. Hudson, and Newport, Elissa L. (2005) Regularizing unpredictable variation: The roles of adult and child learners in language formation and change. *Language Learning and Development*. Vol 1(2), pp. 151-195.

Week 4: Feb. 17th **Arguments and evidence against UG & POS**

Pullum, G., and Scholz, B. (2002) Empirical assessment of stimulus poverty arguments. *Linguistic Review*. Vol 19(1-2), pp. 9-50

Scholz, B., and Pullum, G. (2006). Irrational nativist exuberance. In R. Stainton (Ed.),

Contemporary debates in cognitive science. Pp. 59-74. Malden, MA: Blackwell.

Sampson, G. (2005). *The “Language Instinct” Debate*. (Revised edition). Chapter 3. How people really speak. Pp. 71-91. Chapter 5. Language structure turns Queen’s evidence. Pp. 151-166. London: Continuum.

Week 5: Feb. 24th **Empirical evidence against UG & POS**

Tomasello, Michael. (2000) The item-based nature of children’s early syntactic development. *Trends in Cognitive Sciences*. Vol 4(4), pp. 156-163.

Everett, Daniel L. (2007) Challenging Chomskyan linguistics: The case of Piraha. *Human Development*. Vol 50(6), pp. 297-299.

Monaghan, Padraic, Christiansen, Morten H., and Chater, Nick. (2007) The phonological-distributional coherence hypothesis: Cross-linguistic evidence in language acquisition. *Cognitive Psychology*. Vol 55(4), pp. 259-305.

Ambridge, B., Rowland, C., and Pine, J. (2008). Is structure dependence an innate constraint? New experimental evidence from children’s complex-question production. *Cognitive Science*, 32(1), 222-255.

(Optional: “Language and Cognition” in preparation for Carruthers’ Feb. 25 talk, see Week 8.)

Week 6: Mar. 3rd **Alternatives to UG models of language learning**

Tomasello, Michael. (2005) Beyond formalities: The case of language acquisition. *Linguistic Review*. Vol 22(2-4), pp. 183-197.

Bod, Rens. (2006) Exemplar-based syntax: How to get productivity from examples. *Linguistic Review*. Vol 23(3), 2006, pp. 291-320.

Chater, Nick, and Manning, Christopher D. (2006) Probabilistic models of language processing and acquisition. *Trends in Cognitive Sciences*. Vol 10(7), Jul 2006, pp. 335-344.

Christiansen, M., and Chater, N. (2008). Language as shaped by the brain. *Behavioral and Brain Sciences*, 31, 489-509.

Spring Break

Week 7: Mar. 24th **Language and Meaning**

Gleitman, Lila. (1990) The Structural Sources of Verb Meanings. *Language Acquisition*, Volume 1(1), pp. 3-55.

Lidz, J., Gleitman, H., & Gleitman, L. (2003). Understanding how input matters: Verb learning and the footprint of universal grammar. *Cognition* 87. pp. 151-178.

Goldberg, Adele. (2004) But do we need universal grammar? Comment on Lidz et al. (2003). *Cognition* Vol 94(1), pp. 77-84.

Casenhiser, Devin, & Goldberg, Adele E. (2005) Fast mapping between a phrasal form and meaning. *Developmental Science*. Vol 8(6), pp. 500-508.

March 26th: Paul Kockelman talk, 6pm Taylor 203.

Week 8: Mar. 31st **Language's Role in Cognition**

Short Writing Assignment Due.

Carruthers, Peter. (2009) Language and Cognition. In Margolis, E. Samuels, R. and Stich, S., editors, *The Oxford Handbook of Philosophy of Cognitive Science*. OUP.

Penn, D., Holyoak, K., and Povinelli, D. (2008). Darwin's mistake: Explaining the discontinuity between human and nonhuman minds. *Behavioral and Brain Sciences*, 31, 109-130 and selected commentaries.

Clark, Andy. (2006). Language, embodiment, and the cognitive niche. *Trends in Cognitive Sciences*, 10(8), 370-374.

Optional: Clark, Andy. (2006). Material symbols. *Philosophical Psychology*, 19(3), 291 - 307.

Week 9: Apr. 7th **Language and Numerical Cognition**

Short Writing Assignment Due.

Gordon, P. (2004) Numerical cognition without words: Evidence from Amazonia. *Science* 306. pp. 496 - 499.

Pica, P, Lemer, C, Izard V. (2004) Exact and approximate calculation in an Amazonian

indigene group with a reduced number lexicon. *Science* 306. 499 - 503.

Butterworth, Brian, Reeve, Robert, Reynolds, Fiona and Lloyd, Delyth. (2008) Numerical Thought with and without words: Evidence from Indigenous Australian Children. *Proceedings of the National Academy of Sciences of the USA* vol. 105, no. 35, pp. 13179 - 13184.

Frank, Michael C., Everett, Daniel L., Fedorenko, Evelina, and Gibson, Edward. (2008) Number as a cognitive technology: Evidence from Piraha language and cognition. *Cognition*. Vol 108(3), pp. 819-824.

Frank, M., Fedorenko, E., and Gibson, E. (2008). Language as a cognitive technology: English-speakers match like Piraha when you don't let them count. *Proceedings of the 30th Annual Meeting of the Cognitive Science Society*. Pp. 439-444.

April 10th: Final Project Source List Due.

Week 10: Apr. 14th **Language and Counterfactual Reasoning**

Nisbett, Richard E., Peng, Kaiping, Choi, Incheol, and Norenzayan, Ara. (2001) Culture and systems of thought: Holistic versus analytic cognition. *Psychological Review*. Vol 108(2), pp. 291-310.

Nisbett, Richard E., and Miyamoto, Yuri. (2005) The influence of culture: Holistic versus analytic perception. *Trends in Cognitive Sciences*. Vol 9(10), pp. 467-473.

Au, T. K. (1983). Chinese and English counterfactuals: The Sapir-Whorf hypothesis revisited. *Cognition*, 15, 155- 187.

Au, T. K. (1984). Counterfactuals: In reply to Alfred Bloom. *Cognition*, 17, 289-302.

Liu, L.G. (1985). Reasoning counterfactually in Chinese: Are there any obstacles? *Cognition*, 21, 239-270.

Yeh, D. & Gentner, D. (2005). Reasoning counterfactually in Chinese: Picking up the pieces. *Proceedings of the Twenty-seventh Annual Meeting of the Cognitive Science Society*, pp. 2410-2415.

Week 11: Apr. 21st **Language, Objects, and Spatial Cognition**

Landau, B., and Jackendoff, R. (1993). “What” and “where” in spatial language and spatial cognition. *Behavioral and Brain Sciences*, 16(2), 217-238, 255-265.

Munnich, E., Landau, B., & Doshier, B. (2001) Spatial language and spatial representation: A cross-linguistic comparison. *Cognition* 81, 171-207.

April 24th: Final Project Revised Source List and Annotations Due.

Week 12: Apr. 28th **More on Language and Spatial Cognition**

Landau, B. and Hoffman, J.E. (2005) Parallels between spatial cognition and spatial language: Evidence from Williams syndrome. *Journal of Memory and Language*. 53 (2) 163-185.

Majid, Asifa, Bowerman, Melissa, Kita, Sotaro, Haun, Daniel B. M., and Levinson, Stephen C. (2004) Can language restructure cognition? The case for space. *Trends in Cognitive Sciences*. Vol 8(3), pp. 108-114.

Bowerman, Melissa. (2007). Containment, support, and beyond: Constructing topological spatial categories in first Language Acquisition. In Aurnague, Michel, Hickmann, Maya, and Vieu, Laure, The categorization of spatial entities in language and cognition. *Human cognitive processing*. (pp. 177-203). Amsterdam, Netherlands: John Benjamins Publishing Company.

Gentner, D. (2007). Spatial cognition in apes and humans. *Trends in Cognitive Sciences*, 11, 192-194.

April 29th: Barbara Landau talk.

Week 13: May 5th **Final Seminar**

May 12th: Final Projects Due.

Academic accommodations are available for students with disabilities who are registered with the Office of Disability and Support Services. Students in need of disability accommodations should schedule an appointment with us early in the semester to discuss any accommodations for this course which have been approved by the Office of Disability and Support Services, as indicated in your DSS accommodation letter.