PSYC 798C / HESP 818P SPRING 2013

UNIVERSITY OF MARYLAND, DEPARTMENT OF PSYCHOLOGY / HEARING & SPEECH SCIENCES

ORIGINS OF KNOWLEDGE

***Meeting time*:** Monday, 4-6:30PM

***Location*:** BPS 1112

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Website: The course website is listed on ELMS (http://myelms.umd.edu). All readings, course documents, and announcements will be posted on the website. All assignments will also be submitted through the website.

Overview: What accounts for the human capacity to perceive and reason about the world? This course will explore the origins and development of human knowledge in the individual child. We will review in detail conceptual development within a number of different domains: knowledge of the physical world, of the social world, of language, and of abstract notions such as number and causality. In each case, we will consider the initial stock of conceptual primitives available to the child, including similarities and dissimilarities with those of other species. We will also explore the many ways in which learning and experience impact cognition, from individual exploration to language and culture. We will draw evidence primarily from studies of cognitive development, but we will also incorporate insights from the fields of adult cognitive psychology, linguistics, cultural anthropology, behavioral ecology, comparative psychology, and the history of science.

Evaluation: Your performance in this course will be assessed in three parts.

- Attendance and participation (20%): Our primary goal is to have an active and illuminating discussion of the readings, so we will be grading you on participation. Be prepared and be engaged! Your grade will be based on whether you come prepared to discuss the readings, the relevance of your comments to the ongoing discussion, and your ability to integrate the readings and comments made by other seminar participants.
- Weekly discussion posts (20%): To help you prepare and to help us track participation, we ask that **before each seminar, you jot down in 200 words or less:** 1) any clarification questions you might have or notes about material that you found confusing or worth reviewing and/or 2) any substantive questions about the interpretation of the data, the theoretical claims being made, or how the findings can be reconciled with other data. **Please post these on the Discussion Board on ELMS by 5PM on the Sunday before we meet.** Also feel free to browse and reply to other people's comments before class.
- Presentations (20%). Presentations for each session will be assigned across the group on the first day of class. Please check in with the instructors during the week prior to your scheduled discussion leading day, to talk briefly about points of emphasis and possible supplementary readings. You will not be required to "teach" the course, as all members of the group will be expected to participate. However, your role will be to direct the discussion to pertinent and interesting issues. Ideally you should begin with a short review of the day's articles and then introduce questions for discussion (see ***QALMRI*** as a helpful guide for how to do this). Be sure to incorporate the comments and questions raised in the online discussion posts. Powerpoint-guided presentations are not allowed. Instead you should make copies of your outline or notes for the other participants and upload these to ELMS prior to the class you lead. You may also use computers to display study images and videos if doing so will enhance the discussion. Auditors will be required to lead a discussion.
- Final papers (40%). A final paper is due at the end of the semester (approximately 15 double-spaced pages). The goal of this paper is for you to expand on the issues that come up during our discussions of the readings. It will provide a chance for you to develop an argument more systematically and incorporate relevant empirical and theoretical work, beyond the assigned readings. If you would like the instructor(s) to read a draft, please

submit it at least two weeks before the deadline. **Please submit your papers on ELMS by midnight on May 10 (Reading day).**

Policies: Everyone is expected to come prepared to discuss the readings for the week. Class attendance is essential and if you cannot attend a particular session please let us know as soon as possible.

- Students with disabilities or special needs: If you have special needs with regards to this class, please contact us so that appropriate accommodations can be arranged.
- Academic honesty: All students are expected to adhere to campus policy on academic integrity. Cheating on academic work will not be tolerated in any form and will be subject to strong penalties in this class and the university system. If you cheat on a paper or assignment, you risk failing the class, as well as suspension or expulsion from the University as a whole. Academic dishonesty includes, but is not limited to, misrepresenting someone else's work as your own, falsifying any information in a citation or academic exercise, using unauthorized materials in any academic exercise, or helping another to commit academic dishonesty. You are expected to work independently on your papers.
- Feedback: This is the first time we will be teaching this class so any feedback you might have would be greatly appreciated. For example, perhaps you thought that some readings were engaging (and others were boring) or some topics were clear (or confusing) or some assignments were effective (or tedious). Please feel free to make your opinions known throughout the semester.

TENTATIVE SEMESTER SCHEDULE

Date	Topic	Leader
Jan 28	Intro and organization	
Feb 4	Depth perception	
Feb 11	Concepts and theories	
Feb 18	Objects	
Feb 25	Intentional agents	
March 4	Animal and preverbal communication	
March 11	Speech perception	
March 18	*No class – SPRING BREAK*	
March 25	Syntax	
April 1	Language and thought	
April 8	Spatial Cognition	
April 15	Number	
April 22	Causal inference	
April 29	Caring and culture	
May 6	Adult knowledge; Wrap-up discussion	
May 10	Final papers due at midnight	

TENTATIVE READING LIST

We recommend that you engage the readings in the order that they are listed. Readings designated as optional are required for that week's discussant.

1. January 28: Introduction

2. February 4: Depth perception

1. Spencer, J. P., Blumberg, M. S., McMurray, B., Robinson, S. R., Samuelson, L. K., & Tomblin, J. B. (2009). Short arms and talking eggs: Why we should no longer abide the nativist–empiricist debate. *Child development perspectives, 3*(2), 79-87.
2. Landau, B. (2009). The importance of the nativist–empiricist debate: Thinking about primitives without primitive thinking. *Child development perspectives, 3*(2), 88-90.
3. Spelke, E. S., & Kinzler, K. D. (2009). Innateness, learning, and rationality. *Child development perspectives, 3*(2), 96-98.
4. Descartes, R. "The Dioptrics", in E. Anscome & P.T. Geach, Philosophical Writings. Bobbs-Merril Publishers. **Read Discourse VI, focusing on pages 248-253.**
5. Berkeley, G. "An Essay Towards a New Theory of Vision," A New Theory of Vision and Other Selected Philosophical Writings, 13-19.
6. Gibson, E. J. & Walk, R.D. (1960). "The Visual Cliff," *Scientific American*, *202*(4), 65-71.
7. Campos, J. J., Langer, A., & Krowitz, A. (1970). Cardiac responses on the visual cliff in prelocomotor human infants. *Science*, *170*, 196-197.
8. Adolph, K. E. (2000). Specificity of learning: Why infants fall over a veritable cliff. *Psychological Science*, *11*(4), 290-295.
9. *Optional:* Kellman, P. J. & Arterberry, M.E. "Space Perception," The Cradle of Knowledge: Development of Perception in Infancy, 79-109.

3. February 11: Concepts and Theories

1. Wellman, H. M., & Gelman, S. A. (1992). Cognitive development: Foundational theories of core domains. *Annual review of psychology, 43*(1), 337-375.
2. Smith, L. B., Jones, S. S., Landau, B., Gershkoff-Stowe, L., & Samuelson, L. (2002). Object name learning provides on-the-job training for attention. *Psychological Science, 13*(1), 13-19.
3. Dewar, K., & Xu, F. (2009). Do early nouns refer to kinds or distinct shapes? Evidence from 10-month-old infants. *Psychological Science, 20*(2), 252-257.
4. Newman, G. E., Herrmann, P., Wynn, K., & Keil, F. C. (2008). Biases towards internal features in infants' reasoning about objects. *Cognition*, *107*(2), 420-32
5. *Optional:* Ahn, W. K., Gelman, S. A., Amsterlaw, J. A., Hohenstein, J., & Kalish, C. W. (2000). Causal status effect in children's categorization. *Cognition, 76*(2), B35-B43.

4. February 18: Objects

1. Spelke, E. S. (1998). Nativism, empiricism, and the origins of knowledge. *Infant Behavior and Development, 21*(2), 181-200.
2. Johnson, S. P. (2010). How infants learn about the visual world. *Cognitive science, 34*(7), 1158-1184.
3. Valenza, E., Leo, I., Gava, L., & Simion, F. (2006). Perceptual completion in newborn human infants. *Child development, 77*(6), 1810-1821.

4. Baillargeon, R. (2008). Innate ideas revisited: For a principle of persistence in infants' physical reasoning. *Perspectives on Psychological Science, 3*(1), 2 - 13.
5. *Optional:* Johnson, M. H. (2005). Subcortical face processing. *Nature Reviews. Neuroscience*, *6*(10), 766-74.

5. February 25: Intentional agents

1. Gergely, G. (2010). Kinds of agents: The origins of understanding instrumental and communicative agency. In U. Goswami (Ed.), *The Wiley-Blackwell handbook of childhood cognitive development, second edition* (pp. 76-105). John Wiley & Sons.
2. Sommerville, J. A., Woodward, A. L., & Needham, A. (2005). Action experience alters 3-month-old infants' perception of others' actions. *Cognition, 96*(1), 1-11.
3. Biro, S., & Leslie, A. M. (2007). Infants' perception of goal-directed actions: Development through cue-based bootstrapping. *Developmental Science*, *10*(3), 379-98.
4. Biro, S., Verschoor, S., & Coenen, L. (2011). Evidence for a unitary goal concept in 12-month-old infants. *Developmental Science*, *14*(6), 1255-60.
5. *Optional:* Luo, Y., & Baillargeon, R. (2010). Toward a mentalistic account of early psychological reasoning. *Current Directions in Psychological Science*, *19*(5), 301-307.

6. March 4: Animal and Preverbal communication

1. Lewontin, R. C. (1998). The evolution of cognition: Questions we will never answer. In D. Scarborough & S. Sternberg (Eds.), *An invitation to cognitive science* (Vol. 4: Methods, models, and conceptual issues, pp. 107-132). Cambridge: MIT Press.
2. Gallistel, C. R. (2011). Prelinguistic thought. Language Learning and Development, 7(4), 253-262.
3. Evans, C. S., & Marler, P. (1995). Language and animal communication: Parallels and contrasts. In H. L. Roitblat & J. Meyer (Eds.), *Comparative approaches to cognitive science* (pp. 341-382). Cambridge, MA: MIT Press**.**
4. Terrace, H. S., Petitto, L. A., Sanders, R. J., & Bever, T. G. (1979). Can an ape create a sentence. *Science, 206*(4421), 891-902.
5. Tomasello, M., Carpenter, M., & Liszkowski, U. (2007). A new look at infant pointing. *Child Development*, *78*(3), 705-722.
6. *Optional:* Call, J. (2011). How artificial communication affects the communication and cognition of the great apes. *Mind & Language*, *26*(1), 1-20.

7. March 11: Speech perception

1. Werker, J. F., & Tees, R. C. (2005). Speech perception as a window for understanding plasticity and commitment in language systems of the brain. *Developmental psychobiology, 46*(3), 233-251.
2. Kuhl, P. K., Tsao, F. M., Liu, H. M., Zhang, Y., & Boer, B. (2001). Language/culture/mind/brain. *Annals of the New York Academy of Sciences, 935*(1), 136-174.
3. Maye, J., Weiss, D. J., & Aslin, R. N. (2007). Statistical phonetic learning in infants: Facilitation and feature generalization. *Developmental Science, 11*(1), 122-134.
4. Kuhl, P. K., Tsao, F. M., & Liu, H. M. (2003). Foreign-language experience in infancy: Effects of short-term exposure and social interaction on phonetic learning. *Proceedings of the National Academy of Sciences, 100*(15), 9096-9101.
5. *Optional:* Miller, J. L. (1990). Speech perception. In D. N. Osherson & H. Lasnik (Eds.), *An invitation to Cognitive Science: Language* (Vol. 1, pp. 69-93).

8. March 18: Spring Break

9. March 25: Syntax

1. Tomasello, M. (2000). The item-based nature of children's early syntactic development. *Trends in cognitive sciences, 4*(4), 156-163.
2. Tomasello, M. (2009). Universal grammar is dead. Commentary for *Behavioral and Brain Sciences, 32,* 470-71.
3. Fisher, C., Gertner, Y., Scott, R. M., & Yuan, S. (2010). Syntactic bootstrapping. *Wiley Interdisciplinary Reviews: Cognitive Science, 1*(2), 143-149.
4. Ambridge, B., Pine, J. M., & Rowland, C. F. (2012). Semantics versus statistics in the retreat from locative overgeneralization errors. *Cognition, 123*, 260-279.
5. Yuan, S., & Fisher, C. (2009). "Really? She Blicked the Baby?" Two-Year-Olds Learn Combinatorial Facts About Verbs by Listening. *Psychological Science, 20*(5), 619-626.
6. *Optional:* Chomsky, N. (1959). Verbal behavior. *Language, 35*(1), 26-58.

10. April 1: Language and thought

1. Wolff, P., & Holmes, K. J. (2010). Linguistic relativity. *Wiley Interdisciplinary Reviews: Cognitive Science, 2*(3).
2. Levinson, S. C. (1996). Frames of reference and Molyneux's question: Crosslinguistic evidence. In P. Bloom, M. Peterson, L. Nadel, & M. Garrett (Eds.), *Language and space* (pp. 109-169). Cambridge, MA: MIT Press**.**
3. Haun, D. B., Rapold, C. J., Call, J., Janzen, G., & Levinson, S. C. (2006). Cognitive cladistics and cultural override in hominid spatial cognition. *Proceedings of the National Academy of Sciences of the United States of America*, *103*(46), 17568-73.
4. Li, P., Abarbanell, L., Gleitman, L., & Papafragou, A. (2011). Spatial reasoning in Tenejapan Mayans. *Cognition, 120*(1), 33-53.
5. *Optional:* Whorf, B. L. (1941). The relation of habitual thought and behavior to language. *Language, Culture and Reality, essays in memory of Edward Sapir*, 75-93.

11. April 8: Spatial cognition

1. Barrett, H. C., & Kurzban, R. (2006). Modularity in cognition: Framing the debate. *Psychological Review*, *113*(3), 628-47.
2. Huttenlocher, J., & Lourenco, S. F. (2007). Coding location in enclosed spaces: is geometry the principle? *Developmental Science, 10*(6), 741-746.
3. Lee, S. A., & Spelke, E. S. (2010). A modular geometric mechanism for reorientation in children. *Cognitive psychology, 61*(2), 152-176.
4. *Optional:* Fodor, J. A. (1983). The modularity of mind (part 3, input systems as modules). MIT press, pp. 47 – 101.

12. April 15: Number

1. Feigenson, L., Dehaene, S., & Spelke, E. (2004). Core systems of number. *Trends in cognitive sciences, 8*(7), 307-314.
2. Carey, S. (2009). Beyond core cognition: Natural number. *The origin of concepts*. Oxford University Press, USA.
3. Leslie, A. M., Gelman, R., & Gallistel, C. R. (2008). The generative basis of natural number concepts. *Trends in cognitive sciences, 12*(6), 213-218.
4. Spaepen, E., Coppola, M., Spelke, E. S., Carey, S. E., & Goldin-Meadow, S. (2011). Number without a language model. *Proceedings of the National Academy of Sciences, 108*(8), 3163-3168.

5. Huang, Y., Spelke, E., & Snedeker, J. (2010). When is four far more than three? Children's generalization of newly acquired number words. *Psychological Science, 21*(4), 600-606.
6. *Optional:* Izard, V., Sann, C., Spelke, E. S., & Streri, A. (2009). Newborn infants perceive abstract numbers. *Proceedings of the National Academy of Sciences, 106*(25), 10382-10385.

13. April 22: Causal inference

1. Xu, F., & Denison, S. (2009). Statistical inference and sensitivity to sampling in 11-month-old infants. *Cognition*, *112*(1), 97-104.
2. Xu, F., & Kushnir, T. (2013). Infants are rational constructivist learners. *Current Directions in Psychological Science*, *22*(1), 28-32
3. Carey, S. (2009). Representations of "Cause". *The origin of concepts*. Oxford University Press, USA.
4. Muentener, P., & Schulz, L. (2012). What doesn't go without saying: Communication, induction, and exploration. *Language Learning and Development*, *8*(1), 61-85.
5. *Optional:* Perfors, A., Tenenbaum, J., Griffiths, T.L., and Xu, F. (2011) A tutorial introduction to Bayesian models of cognitive development. *Cognition 120*: 302-321.

14. April 29: Caring and culture

1. Bloom, P. (in press). Moral nativism and moral psychology. In M. Mikulincer & P. R. Shaver (Eds.), *The social psychology of morality: Exploring the causes of good and evil.* American Psychological Association.
2. Warneken, F., & Tomasello, M. (2009). Varieties of altruism in children and chimpanzees. *Trends in Cognitive Sciences*, *13*(9), 397-402.
3. Rand, D. G., Greene, J. D., & Nowak, M. A. (2012). Spontaneous giving and calculated greed. *Nature*, *489*(7416), 427-30.
4. Tomasello, M. (2010). Human culture in evolutionary perspective. *Advances in Culture and Psychology*, *1*(7), 5-52.
5. *Optional: TBD*

15. May 6: Adult knowledge

1. McCloskey, M. (1983). Intuitive physics. *Scientific American*, *248*(4), 114-122.
2. Shtulman, A., & Valcarcel, J. (2012). Scientific knowledge suppresses but does not supplant earlier intuitions. *Cognition*, *124*(2), 209-15.
3. Zaitchik, D., & Solomon, G. E. (2008). Animist thinking in the elderly and in patients with Alzheimer's disease. *Cognitive Neuropsychology*, *25*(1), 27-37.
4. *Optional:* TBD

16. Paper due by midnight on May 10 (Reading day)