

# Topics in Cognitive Development

December 2-6, 2019

Zoltan Jakab, ELTE Institute of Psychology for Special Education

## Objectives

The goal of this course is to offer an inspiring peak into issues of developmental psychology. Since practically everyone in the course has taken some courses in developmental psychology (or so I assume), I shall focus on specialized topics, although they will be properly introduced. The course will consist of lecturing, group discussions and student presentations related to some interesting and foundational issues in cognitive development. The first three days will also include classroom experiments; presentation of stimuli, data collection and evaluation. Regarding the exam I will follow a “Pick your favorite day” policy.

## Themes

Monday

### Concepts and concept learning; Fodor’s heritage

9:00-10:30: Theories of concepts in psychology

10:45-12:15: Fodor’s paradox – what does it take to *learn* a concept?

12:45-13:30: Classroom experiment: Attention and change detection

Readings: The first two of the following four articles are a bit heavygoing. The debate that takes place in them is based on Susan Carey’s 2009 book *The Origin of Concepts*. It is not necessary to read these papers before class; they are recommended readings. One goal of the Monday class is to offer a reconstruction of the argument for and against concept learning in a helpful way.

Rey, Georges. (2014). Innate and learned: Carey, mad dog nativism, and the poverty of stimuli and analogies yet again: *Mind & Language*, 29, 109–32.

Carey, Susan. (2014). On Learning New Primitives in the Language of Thought: Reply to Rey, *Mind & Language*, 29, 133–166.

Wiser, Marianne, and Smith, Carol L. (2016). How Is Conceptual Change Possible? Insights from Science Education, in: David Barner and Andrew Scott Baron (eds.): *Core Knowledge and Conceptual Change*, Oxford University Press, 2016

Shtulman, Andrew, and Lombrozo, Tania (2016). Bundles of Contradiction: A Coexistence View of Conceptual Change, in the Barner&Baron volume

Also recommended is the following volume (we will touch upon some of its ideas in class): Roberto DE Almeida & Lila R. Gleitman (eds.)(2018). *On Concepts, Modules, and Language; Cognitive Science at its Core*, Oxford University Press

Tuesday

### Perceptual development

9:00-10:30: Perceptual development in general; sight restoration after congenital blindness

10:45-12:15: The development of color vision: Why is it hard for children to learn color names?

12:45-13:30: Classroom experiment: Speech perception

Readings:

Knut Nordby: What Is This Thing You Call Color: Can a Totally Color-Blind Person Know about Color? In Torin Alter & Sven Walter (eds.) (2007): *Phenomenal concepts and Phenomenal Knowledge* Oxford University Press

Kovács, I., & Eisenberg, M. (2004) Human Development of Binocular Rivalry, In: *Binocular Rivalry*, Cambridge Mass: The MIT Press, 101-116

Lowenstein, J., H., Nitttrouer, S., & Tarr. E. (2012). Children weight dynamic spectral structure more than adults: Evidence from equivalent signals, *J. Acoust. Soc. Am.* 132(6), EL443-EL449 [<http://dx.doi.org/10.1121/1.4763554>]

Sandhofer, C., M., Smith, L., B. (1999). Learning Color Words Involves Learning a System of Mappings, *Developmental Psychology*, 35(3), 668-679

Wednesday

**Numerical cognition**

9:00-10:30: Core cognition in general; numbers in core cognition

10:45-12:15: The development of the concept of number following infancy

12:45-13:30: Classroom experiment: Numerical cognition

Readings:

The mandatory reading is Carey, Chs 4 and 8, the rest is recommended.

Carey, S. (2009). *The Origin of Concepts*, Oxford University Press, Chapters 4,8,9

Dehaene, S. (2011). *The number sense*. Chapters 2,5,6,9

Thursday

**Conceptual development and social understanding**

9:00-10:30: Intro: the development of mindreading ability

10:45-12:15: Mental files – a representational framework for understanding social cognition

12:45-13:30: Combining concepts in childhood; some ongoing research

Reading:

Victoria Southgate, Coralie Chevallier and Gergely Csibra (2009): Seventeen-month-olds appeal to false beliefs to interpret others' referential communication *Developmental Science* (2009), pp 1–6

Josef Perner, Michael Huemer, Brian Leahy (2015). Mental files and belief: A cognitive theory of how children represent belief and its intensionality, *Cognition* 145 (2015) 77–88

Arlotti, N., Martin, A., Téglás, E., Vorobyova, L., Cetnarski, L., Bonatti, L. (2018). Precursors of logical reasoning in preverbal human infants, *Science* 359, 1263–1266