Philosophy of cognitive science

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Undergraduate tutorials
Hilary term 2013–2014
Wednesdays, 1–2 PM

Course description

This is a tutorial course for undergraduate-level philosophy of cognitive science. To provide a point of focus, the emphasis is on neurophilosophy, as this is gaining increasing prominence in philosophy of cognitive science. Both topics of enduring interest (e.g., consciousness, memory) and newer research programmes (e.g., extended cognition, the modularity of mind) are addressed.

Target audience

This series of tutorials is aimed at undergraduate students who have had some introduction to philosophical concepts (e.g., main meta-ethical positions, empiricism versus nativism). The course does not require a background in cognitive science, as all the relevant concepts will be introduced during discussions and in the readings.

Course goals, format and preparation

The aim of this course is to introduce students to the key topics in philosophy of cognitive science, with an emphasis on cognitive neuroscience. We examine, among other things, what the relationship is between the brain and the mind, how consciousness can be understood neurally, whether some ideas might be innate, and the concepts of embodied, embedded and extended cogniton.
Each tutorial has a required reading of three articles and an assigned essay of about 1500–2000 words, which is based on the readings. I use *The Cambridge Handbook of Cognitive Science*, edited by Keith Frankish and William Ramsey (2012, Cambridge University Press) as well as articles in peer-reviewed journals or edited volumes.

Grading

The final grade is calculated by an assessment of the essays (80% of total score) and participation during tutorial (asking relevant questions, etc., for 20% of total score).

Overview of the course

Week 1 Philosophy of cognitive science: Main themes, topics and challenges

We discuss cognitive science, its history (e.g., phrenology, early neuroimaging techniques), methods and topics of interest, as well as the representational theory of mind, which is fundamental to cognitive science.

Readings:

- Abramsen, Adele & Bechtel, William: History and core themes. In Frankish & Ramsey, Ch 1
- Von Eckhardt, Barbara: The representational theory of mind. In Frankish & Ramsey, Ch 2
- Thagard, Paul: Cognitive architecture. In Frankish & Ramsey, Ch 3

There is no assigned essay for this week, but there is an in-depth discussion of the readings

Week 2 Memory

Cognitive scientists have found that memory can be better described as several adaptive, flexible processes than as a passive and uniform recording of events. We focus on semantic and episodic memory as two distinct memory systems, and examine the role each plays in human cognition

Readings:

- Tulving, Endel. (2002). Episodic memory: From mind to brain. *Annual Review of Psychology*, 53, 1–25.
- Mullally, Sinéad & Maguire, Eleanor. (2013, online first). Memory, imagination, and predicting the future. A common brain mechanism? *The Neuroscientist*.
- Loftus, Elisabeth. (2003). Make-believe memories. *American Psychologist*, 58, 867– 873.

Assignment: Explore the question of why people's memory can be contaminated, referring to the neuroscientific work on episodic memory.

Week 3 Modularity

Cognitive scientists have explored the question to what extent human minds are decomposable in separate, anatomically distinct areas of cognitive specialization or modules. We look at some of the arguments for and against a massive modularity of mind, focusing on evolutionary psychology and cognitive neuroscience

Readings:

- Frankenhuis, Willem & Ploeger, Annemie. (2007). Evolutionary psychology versus Fodor: Arguments for and against the massive modularity hypothesis. *Philosophical Psychology*, 20, 687–710.
- Carruthers, Peter. (2004). Practical reasoning in a modular mind. *Mind & Language*, 19, 259–278.
- Barrett, H. Clark: Evolutionary psychology. In Frankish & Ramsey, Ch 13.

Assignment: Why do evolutionary psychologists expect that the human mind is massively modular? Please examine some possibilities and limitations of this approach.

Week 4 Innateness and empiricism in cognitive science

We discuss the concepts of innateness and empiricism in cognitive science: What characterizes each position, and what empirical evidence is used to support it?

Readings:

- Spelke, Elizabeth. (1998). Nativism, empiricism, and the origins of knowledge. *Infant Behavior and Development*, 21, 181–200.
- Prinz, Jesse. (2004). *Furnishing the mind*, MIT Press, chapter 5.
- Samuels, Richard. (2004). Innateness in cognitive science. *Trends in Cognitive Sciences*, 8, 136–141.

Assignment: Please discuss what characterizes nativism and empiricism in cognitive science, and critically review some of the arguments/evidence that proponents of each position give in support of their view.

Week 5 Neuroethics

We critically reflect what moral philosophy and cognitive neuroscience can learn from each other, focusing on trolley experiments and their interpretations.

Readings:

- Kahane, Guy & Shackel, Nicholas. (2010). Methodological issues in the neuroscience of moral judgement. *Mind & Language*, 25, 561-582.
- Levy, Neil. (2011) Neuroethics: A new way of doing ethics, *AJOB Neuroscience*, 2, 3–9.
- Rini, Regina. (2013, online first). Feedback from moral philosophy to cognitive science. *Philosophical Psychology*.

Assignment: What can neuroscience tell us about meta-ethical positions like consequentialism? Explore some of the critiques to the methods and assumptions that underlie these conclusions.

Week 6 Consciousness

We explore the quest for neural correlates for consciousness, including access consciousness and phenomenological consciousness (what's it like states).

Readings:

- Akins, Kathleen. (1993). What's it like to be boring and myopic? In: J. Dahlbom (Ed), *Dennett and his critics* (pp. 124–160). Oxford: Blackwell.
- Block, Ned. (2005). Two neural correlates of consciousness. *Trends in Cognitive Sciences*, 9, 46–52.
- Mandik, Peter. (2007). The neurophilosophy of consciousness. In: M. Velmans & S. Schneider (Eds), *The Blackwell companion to consciousness* (pp. 418–430). Blackwell.

Assignment: What can the study of the brain tell us about consciousness?

Week 7 Animal cognition

A review of the methodology and assumptions that underlie the study of animal cognition

Readings:

- Shettleworth, Sara: Animal cognition. In Frankish & Ramsey, Ch 15
- Hurley, Susan. (2003). Animal action in the space of reasons. *Mind & Language*, 18, 231–257.
- Newen, Albert & Bartels, Andreas. (2007). Animal minds and the possession of concepts. *Philosophical Psychology*, 20, 283–308.

Assignment: Can animals reason conceptually? What are the methods and assumptions underlying research that addresses this question?

Week 8 The extended mind

We examine several models of extended, embodied and embedded cognition, and critically evaluate the case for extracranial cognition

Readings:

- Clark, Andy: Embodied, embedded, and extended cognition. In Frankish & Ramsey, Ch 14
- Sterelny, Kim. (2010). Minds: Extended or scaffolded? *Phenomenology and the Cognitive Sciences*, 9, 465–481.
- Sutton, John, Celia Harris, Paul Keil & Amanda Barnier (2010). The psychology of memory, extended cognition, and socially distributed remembering. *Phenomenology and the Cognitive Sciences*, 9, 521–560.

Assignment: Can cognition take place outside of the brain, and if so, how can we characterize such extracranial cognitive processes?