

# UCSB INT200A: Introduction to Cognitive Science – Spring 2022

**Weekly Seminar: Mondays 3-4:50PM**

**Room: SH 5705**

**Instructors: Aaron Zimmerman and Tamsin German**

This course, newly upgraded to 4-units, offers an overview of Cognitive Science as an interdisciplinary field that emerged at the intersection of a number of existing disciplines, including psychology, linguistics, computer science, philosophy, anthropology and neuroscience, and is now expanding more widely into the social sciences and humanities. Since the field was founded on the principle that new knowledge should be developed at the intersection among disciplines, many of the class sessions will involve discussions with researchers from UCSB who are investigating an aspect of cognition from different disciplinary perspectives.

**Office Hours** – Aaron Zimmerman – email [aaronzimmerman@ucsb.edu](mailto:aaronzimmerman@ucsb.edu) for an appointment

**Office Hours** – Tamsin German -- email [german@psych.ucsb.edu](mailto:german@psych.ucsb.edu) for an appointment

## Course Requirements

1. Serve as weekly discussion facilitator as assigned
2. Participation in class discussions
3. Final (12-15 page) paper on cognitive aspects of actual or envisioned research
4. Brief presentation on research during the penultimate class session

## Course Schedule

### March 28 – The Philosophy of Cognitive Science

Reading 1: [https://en.wikipedia.org/wiki/Cognitive\\_science](https://en.wikipedia.org/wiki/Cognitive_science)

Reading 2: G. Miller, “The Cognitive Revolution: A Historical Perspective,” *Trends in Cognitive Sciences*, vol 7, no 3 (March 2003).

Reading 3: Núñez et al. 2019. “What happened to cognitive science?” *Nature Human Behaviour*, 3(8), 782– 791.

Recommended: Gray, Wayne D. 2019. “Welcome to Cognitive Science: The Once and Future Multidisciplinary Society,” *Topics in Cognitive Science* 11, pp. 838–844. Overview of responses to Núñez et al. 2019. <https://onlinelibrary-wiley-com.proxy.library.ucsb.edu:9443/share/MYG99WS3ESJGB3WITJZB?target=10.1111/tops.12471>

Discussion leader: Aaron Zimmerman (Philosophy)

### April 4 – The Evolution of the Human Mind

Reading 1: Gaulin, S. J. C. (in press). “Evolutionary psychology.” In *Encyclopedia of Human Sexuality*, W. Trevathan, Ed. Wiley/Blackwell: New York.

Reading 2: Hanson-Sobraske, K., J. S. Boster, and S. J. C. Gaulin (2013). "Mapping the conceptual space of jealousy." *Ethos* 41:249-270.

Guest: Steve Gaulin (Anthropology)

### **April 11 – Emotion and Cognition**

Reading 1: Nabi, R. L., & Myrick, J. G. (2018). Uplifting fear appeals: Considering the role of hope in fear-based persuasive messages. *Health Communication*, 1-12.

Reading 2: Nabi, R. L., & Prestin, A. (2016). Unrealistic hope vs. unnecessary fear: Exploring how sensationalistic news stories influence health behavioral motivation. *Health Communication*

Reading 3: Nabi, R. L. (2002). The lay versus theoretical meaning of disgust: Implications for emotion research. *Cognition and Emotion*, 16, 695-703.

Guest: Robin Nabi (Communication)

### **April 18 – Computational Models of Perception**

Reading 1: Jacob Feldman, "Bayesian Models of Perceptual Organization," in J. Wagemans (ed.), *Oxford Handbook of Perceptual Organization*.

Reading 2: R. Denison, N. Block and J. Samaha, "What do Models of Visual Perception Tell Us About Visual Phenomenology?"

Guests: Luis Franco (Biology and Biological Engineering, Cal Tech)

### **April 25– Attention and Awareness in Conscious Experience**

Reading 1: Giesbrecht, B., Sy, J. L., Guerin, S. A. (2012). Both memory and attention systems contribute to visual search for targets cued implicitly by learned context. *Vision Research*, <http://dx.doi.org/10.1016/j.visres.2012.10.006>(epub ahead of print).

Reading 2: J. Cheesman and P.M. Merikle, "Distinguishing Conscious from Unconscious Perceptual Process," *Canadian Journal of Psychology*, 1986, 40, 4, pp. 343-367.

Guest: Barry Giesbrecht (Psychology and Brain Science)

### **May 2 – Spatial Cognition**

Reading: Montello, D. R. (2018). "Behavioral and cognitive geography: Introduction and overview," in D. R. Montello (Ed.), *Handbook of behavioral and cognitive geography* (pp. 3–15). Cheltenham, UK; Northampton, MA: Edward Elgar Publishing.

Guest: Dan Montello (Geography)

## **May 9 – Religious Cognition**

Reading 1: Barlev, M., Mermelstein, S., & German, T. C. (2017). Core intuitions about persons coexist and interfere with acquired Christian beliefs about God. *Cognitive Science*, 41(S3), 425-454.

Reading 2: Barlev, M., Mermelstein, S., & German, T. C. (2018). Representational coexistence in the God concept: Core knowledge intuitions of God as a person are not revised by Christian theology despite lifelong experience. *Psychonomic Bulletin & Review*, 1 - 9.

Reading 3: Barlev, M., & Shtulman, A. (2021). Minds, bodies, spirits, and gods: Does widespread belief in disembodied beings imply that we are inherent dualists? *Psychological Review*, 128, 1007-1021

Discussion Leader: Tamsin German (Psychology and Brain Science)

## **May 16 – Language Comprehension and Numerical Cognition**

Reading 1: Okamoto, Y. (2018). Effects of mathematics language on children's achievement and central conceptual knowledge. In D. Berch (Ed.), *Language and culture in mathematical cognition* (pp. 73-98). San Diego, CA: Elsevier.

Reading 2: Zhang, Y., & Okamoto, Y. (2017). Encoding “10ness improves first graders’ estimation of numerical magnitudes. *Journal of Numerical Cognition*, 2, 202-219.

Guest: Yukari Okamoto (Education)

## **May 23 – Consciousness and Meta-Cognition**

Reading 1: Mooneyham, B. W., Mrazek, M. D., Mrazek, A. J., Mrazek, K. L., Phillips, D. T., & Schooler, J.W. (2016). States of mind: Characterizing the neural bases of focus and mind-wandering through dynamic functional connectivity. *Journal of Cognitive Neuroscience*.

Reading 2: Schooler, J. W., Mrazek, M. D., Baird, B., & Winkielman, P. (2015). Minding the mind: The value of distinguishing among unconscious, conscious, and metaconscious processes. *APA Handbook of Personality and Social Psychology*, 1, 179-202.

Guest: Jonathan Schooler (Psychology and Brain Science)

## **May 30 - Student Presentations**

**June 5** – Final paper due.