

# Topics 1

- **01. WHAT IS COGNITIVE SCIENCE?**

- 1. Turing, A.M. (1950). Computing machinery and intelligence. *Mind*, 59, 433-460.
- 2. Marr, D. (2000). Vision. In R. Cummins & D. D. Cummins (Eds.), *Minds, Brains, and Computers: The Foundations of Cognitive Science* (pp. 69–83). Blackwell Publishers.

- **02. WHAT/WHO IS COGSCI FOR?**

- 1. Mook, D. G. (1983). In defense of external invalidity. *American Psychologist*, 38(4), 379-387.
- 2. Thomas, A. K., McKinney de Royston, M., & Powell, S. (2023). Color-evasive cognition: the unavoidable impact of scientific racism in the founding of a field. *Current Directions in Psychological Science*, 32(2), 137-144.

- **03. CONCEPTS 1: WHAT ARE CONCEPTS?**

- 1. Mervis, C. B., & Rosch, E. (1981). Categorization of natural objects. *Annual Review of Psychology*, 32, 89–115.
- 2. Armstrong, S. L., Gleitman, L. R., & Gleitman, H. (1983). What some concepts might not be. *Cognition*, 13, 263-308.

- **04. CONCEPTS 2: ARE CONCEPTS EMBODIED?**

- 1. Barsalou, L. W. (2016). On staying grounded and avoiding quixotic dead ends. *Psychonomic Bulletin & Review*, 23(4), 1122-1142.
- 2. Leshinskaya, A., & Caramazza, A. (2016). For a cognitive neuroscience of concepts: Moving beyond the grounding issue. *Psychonomic Bulletin & Review*, 23(4), 991-1001.

- **05. CONCEPTS 3: NUMBERS**

- 1. Sarnecka, B. W., & Wright, C. E. (2013). The idea of an exact number: Children's understanding of cardinality and equinumerosity. *Cognitive Science*, 37(8), 1493-1506.
- 2. Jara-Ettinger, J., Piantadosi, S., Spelke, E. S., Levy, R., & Gibson, E. (2017). Mastery of the logic of natural numbers is not the result of mastery of counting: Evidence from late counters. *Developmental Science*, 20, e12459.

- **06. MODULARITY 1: WHAT'S THE STRUCTURE OF MENTAL PROCESSES?**

- 1. Fodor, J. A. (1983). The modularity of mind (part 3, input systems as modules). MIT press, pp. 47-101.
- 2. Prinz, J. (2006). Is the mind really modular? *Contemporary Debates in Cognitive Science*. Ed. RJ Stainton, 22-36.

- **07. MODULARITY 2: IS VISUAL PROCESSING MODULAR?**

- 1. Pylyshyn, Z. (1999). Is vision continuous with cognition? The case for cognitive impenetrability of visual perception. *Behavioral and Brain Sciences*, 22, 341-365.
- 2. Lupyan, G. (2015). Cognitive penetrability of perception in the age of prediction: Predictive systems are penetrable systems. *Review of Philosophy and Psychology*, 6, 547-569.

- **08. MODULARITY 3: IS FACE PROCESSING MODULAR?**

- 1. Schalk, G., Kapeller, C., Guger, C., Ogawa, H., Hiroshima, S., Lafer-Sousa, R., ... & Kanwisher, N. (2017). Facephenes and rainbows: Causal evidence for functional and anatomical specificity of face and color processing in the human brain. *Proceedings of the National Academy of Sciences*, 114(46), 12285-12290.
- 2. Gomez, J., Barnett, M., & Grill-Spector, K. (2019). Extensive childhood experience with Pokémon suggests eccentricity drives organization of visual cortex. *Nature Human Behaviour*, 3(6), 611-624.

# Topics 2 (\*\*new)

- **09. BODILY COGNITION: 4E (embodied, embedded, extended, enacted) \*\***
  - 1. Varela, F. J. (1997). Patterns of life: Intertwining identity and cognition. *Brain and cognition*, 34(1), 72-87.
  - 2. Cappuccio, M. L. (2017). Mind-upload. The ultimate challenge to the embodied mind theory. *Phenomenology and the Cognitive Sciences*, 16(3), 425-448.
- **10. BRAIN ARCHITECTURE 1: CONNECTIONS \*\***
  - 1. Bullmore, E., & Sporns, O. (2012). The economy of brain network organization. *Nature reviews neuroscience*, 13(5), 336-349.
  - 2. Reimann, M. W., Nolte, M., Scolamiero, M., Turner, K., Perin, R., Chindemi, G., ... & Markram, H. (2017). Cliques of neurons bound into cavities provide a missing link between structure and function. *Frontiers in computational neuroscience*, 11, 266051.
- **11. BRAIN ARCHITECTURE 2: POPULATIONS \*\***
  - 1. Behrens, T. E., Muller, T. H., Whittington, J. C., Mark, S., Baram, A. B., Stachenfeld, K. L., & Kurth-Nelson, Z. (2018). What is a cognitive map? Organizing knowledge for flexible behavior. *Neuron*, 100(2), 490-509.
  - 2. Saxena, S., & Cunningham, J. P. (2019). Towards the neural population doctrine. *Current opinion in neurobiology*, 55, 103-111.
- **12. BRAIN ARCHITECTURE 3: REPRESENTATIONS \*\***
  - 1. Brette, R. (2019). Is coding a relevant metaphor for the brain?. *Behavioral and Brain Sciences*, 42, e215.
  - 2. Kriegeskorte, N., & Diedrichsen, J. (2019). Peeling the onion of brain representations. *Annual review of neuroscience*, 42(1), 407-432.
- **13. COGNITIVE ARCHITECTURE 1: PREDICTIONS EVERYWHERE \*\***
  - 1. Rao, R. P., & Ballard, D. H. (1999). Predictive coding in the visual cortex: a functional interpretation of some extra-classical receptive-field effects. *Nature neuroscience*, 2(1), 79-87.
  - 2. Litwin, P., & Miłkowski, M. (2020). Unification by fiat: Arrested development of predictive processing. *Cognitive Science*, 44(7), e12867.
- **14. COGNITIVE ARCHITECTURE 2: BAYESIAN MODELS**
  - 1. Tenenbaum, J. B., Kemp, C., Griffiths, T. L., & Goodman, N. D. (2011). How to grow a mind: Statistics, structure, and abstraction. *Science*, 331, 1279-1285.
  - 2. Marcus, G. F., & Davis, E. (2013). How robust are probabilistic models of higher-level cognition? *Psychological Science*, 24, 2351-2360.
- **15. COGNITIVE ARCHITECTURE 3: REINFORCEMENT LEARNING \*\***
  - 1. Schultz, W., Dayan, P., & Montague, P. R. (1997). A neural substrate of prediction and reward. *Science*, 275(5306), 1593-1599.
  - 2. Eckstein, M. K., Wilbrecht, L., & Collins, A. G. (2021). What do reinforcement learning models measure? Interpreting model parameters in cognition and neuroscience. *Current opinion in behavioral sciences*, 41, 128-137.
- **16. COGNITIVE ARCHITECTURE 4: UNIFICATIONS \*\***
  - 1. Gershman, S. J. (2015). A unifying probabilistic view of associative learning. *PLoS computational biology*, 11(11), e1004567.
  - 2. Kriegeskorte, N., & Douglas, P. K. (2018). Cognitive computational neuroscience. *Nature neuroscience*, 21(9), 1148-1160.<sup>2</sup>

# Topics 3

- **17. INNATENESS 1: ARE OBJECT CONCEPTS INNATE?**
  - 1. Spelke, E. S. (1998). Nativism, empiricism, and the origins of knowledge. *Infant Behavior and Development*, 21, 181-200.
  - 2. Johnson, S. P. (2010). How infants learn about the visual world. *Cognitive Science*, 34, 1158-1184.
- **18. INNATENESS 2: LANGUAGE**
  - 1. Dautriche, I., Goupil, L, Smith K. & Rabagliati, H (2021), Knowing how you know: Toddlers re-evaluate words learnt from an unreliable speaker *Open Mind*, 5, 1-19
  - 2. Pearl, L. (2022). Poverty of the stimulus without tears. *Language Learning and Development*, 18(4), 415-454.
- **19. METHOD 1: QUANTITATIVE PERSPECTIVES \*\***
  - 1. Meehl, P. E. (1967). Theory-testing in psychology and physics: A methodological paradox. *Philosophy of science*, 34(2), 103-115.
  - 2. Poldrack, R. A. (2006). Can cognitive processes be inferred from neuroimaging data?. *Trends in cognitive sciences*, 10(2), 59-63.
- **20. METHOD 2: THE NEED FOR PARADIGMS \*\***
  - 1. Jolly, E., & Chang, L. J. (2019). The flatland fallacy: Moving beyond low-dimensional thinking. *Topics in cognitive science*, 11(2), 433-454.
  - 2. Krakauer, J. W., Ghazanfar, A. A., Gomez-Marin, A., MacIver, M. A., & Poeppel, D. (2017). Neuroscience needs behavior: correcting a reductionist bias. *Neuron*, 93(3), 480-490.
- **21. EVOLUTION OF COGNITION: DID LANGUAGE COME BEFORE OR AFTER? \*\***
  - 1. Fitch, W. T. (2011). The evolution of syntax: an exaptationist perspective. *Frontiers in evolutionary neuroscience*, 3, 9.
  - 2. Putt, S. S., Wijekumar, S., Franciscus, R. G., & Spencer, J. P. (2017). The functional brain networks that underlie Early Stone Age tool manufacture. *Nature Human Behaviour*, 1(6), 0102.
- **22. SOCIAL COGNITION 1: WHY DO WE COOPERATE?**
  - 1. Rand, D. & Nowak, M. A. (2013). Human cooperation. *Trends in Cognitive Sciences*, 17, 413–425. 6
  - 2. Tan, J., Ariely, D., & Hare, B. (2017). Bonobos respond prosocially toward members of other groups. *Scientific Reports*, 7(1), 1-11.
- **23. SOCIAL COGNITION 2: THE ORIGINS OF SOCIAL COGNITION**
  - 1. Bettle, R. & Rosati, A.G. (2021). The primate origins of human social cognition. *Language Learning and Development*, 17: 96-127.
  - 2. de Villiers, J. G., & de Villiers, P. A. (2014). The role of language in theory of mind development. *Topics in Language Disorders*, 34, 313-328

# Topics 4

- **24. SOCIAL COGNITION 3: ARE WE COOPERATIVE OR COMPETITIVE? \*\***
  - Context: Hardin, G. (1968). The tragedy of the commons. *Science*, 162(3859), 1243–1248.
  - 1. Nowak, M. A. (2006). Five rules for the evolution of cooperation. *Science*, 314(5805), 1560–1563.
  - 2. Fehr, E., & Gächter, S. (2000). Fairness and retaliation: The economics of reciprocity. *Journal of Economic Perspectives*, 14(3), 159–181
- **25. SOCIAL COGNITION 4: THE NEURAL NEED TO INFER OTHERS \*\***
  - 1. Koster-Hale, J., & Saxe, R. (2013). Theory of mind: a neural prediction problem. *Neuron*, 79(5), 836-848.
  - 2. Joiner, J., Piva, M., Turrin, C., & Chang, S. W. (2017). Social learning through prediction error in the brain. *NPJ science of learning*, 2(1), 8.
- **26. SOCIAL NETWORKS: BELIEFS IN CROWDS \*\***
  - 1. Guilbeault, D., Becker, J., & Centola, D. (2018). Complex contagions: A decade in review. *Complex spreading phenomena in social systems: Influence and contagion in real-world social networks*, 3-25.
  - 2. Wheatley, T., Thornton, M. A., Stolk, A., & Chang, L. J. (2024). The emerging science of interacting minds. *Perspectives on Psychological Science*, 19(2), 355-373.
- **27. CULTURAL PSYCHOLOGY: EAST, WEST AND IN BETWEEN \*\***
  - 1. Inglehart, R., & Baker, W. E. (2000). Modernization, cultural change, and the persistence of traditional values. *American sociological review*, 65(1), 19-51.
  - 2. Oyserman, D., Coon, H. M., & Kemmelmeier, M. (2002). Rethinking individualism and collectivism: evaluation of theoretical assumptions and meta-analyses. *Psychological bulletin*, 128(1), 3.
- **28. CULTURAL NEUROSCIENCE: EAST, WEST AND THE BRAIN \*\***
  - 1. Kitayama, S., & Uskul, A. K. (2011). Culture, mind, and the brain: Current evidence and future directions. *Annual review of psychology*, 62(1), 419-449.
  - 2. Chiao, J. Y., Cheon, B. K., Pornpattananangkul, N., Mrazek, A. J., & Blizinsky, K. D. (2013). Cultural neuroscience: progress and promise. *Psychological inquiry*, 24(1), 1-19.
- **29. COGNITIVE SYSTEMS 1: REASONING WITH HEURISTICS AND BIASES \***
  - 1. Tversky, A., & Kahneman, D. (1974). Judgment under uncertainty: Heuristics and biases. *Science*, 185, 1124–1131.
  - 2. Gigerenzer, G., & Brighton, H. (2009). Homo heuristics: Why biased minds make better inferences. *Topics in cognitive science*, 1(1), 107-143. \*
- **30. COGNITIVE SYSTEMS 2: MEMORY**
  - 1. Roediger, H.L. III (1990). Implicit memory: retention without remembering. *American Psychologist*, 45, 1043-1056.
  - 2. Rugg, M.D. & Yonelinas, A.P. (2003). Human recognition memory: A cognitive neuroscience perspective. *Trends in Cognitive Sciences*, 7, 313-319.

# Topics 5

- **31. THINKING 1: TWO SYSTEMS TO DECIDE \***
  - 1. Evans, J. St B. T. (2003). In two minds: dual-process accounts of reasoning. *Trends in Cognitive Sciences*, 7, 454-459.
  - 2. Melnikoff, D. E., & Bargh, J. A. (2018). The mythical number two. *Trends in cognitive sciences*, 22(4), 280-293. \*
- **32. THINKING 2: MODEL-FREE VS MODEL-BASED \*\***
  - 1. Daw, N. D., Niv, Y., & Dayan, P. (2005). Uncertainty-based competition between prefrontal and dorsolateral striatal systems for behavioral control. *Nature neuroscience*, 8(12), 1704-1711.
  - 2. Collins, A. G., & Cockburn, J. (2020). Beyond dichotomies in reinforcement learning. *Nature Reviews Neuroscience*, 21(10), 576-586.
- **33. THINKING 3: COLLECTIVE KNOWLEDGE**
  - 1. Navajas, J., Niella, T., Garbulsky, G., Bahrami, B., & Sigman, M. (2018). Aggregated knowledge from a small number of debates outperforms the wisdom of large crowds. *Nature Human Behaviour*, 2, 126-132.
  - 2. Rabb, N., Fernbach, P. M., & Sloman, S. A. (2019). Individual representation in a community of knowledge. *Trends in Cognitive Sciences*, 23, 891-902.
- **34. THINKING 4: THE MOST RATIONAL DEFINITION OF RATIONALITY \*\***
  - 1. Gershman, S. J., Horvitz, E. J., & Tenenbaum, J. B. (2015). Computational rationality: A converging paradigm for intelligence in brains, minds, and machines. *Science*, 349(6245), 273-278.
  - 2. Gigerenzer, G. (2025). The rationality wars: a personal reflection. *Behavioural Public Policy*, 9(3), 495-515.
- **35. NEUROAI 1: IS AI PART OF COGNITIVE SCIENCE?**
  - 1. Kay, K. N. (2018). Principles for models of neural information processing. *NeuroImage*, 180, 101-109.
  - 2. Perconti, P., & Plebe, A. (2020). Deep learning and cognitive science. *Cognition*, 203, 104365.
- **36. NEUROAI 2: FROM THE BRAIN TO AI – AND AI TO THE BRAIN \*\***
  - 1. LeCun, Y., Bengio, Y., & Hinton, G. (2015). Deep learning. *nature*, 521(7553), 436-444.
  - 2. Doerig, A., Sommers, R. P., Seeliger, K., Richards, B., Ismael, J., Lindsay, G. W., ... & Kietzmann, T. C. (2023). The neuroconnectionist research programme. *Nature Reviews Neuroscience*, 24(7), 431-450.
- **37. NEUROAI 3: COGNITIVE PROPERTIES OF LLMS \*\***
  - 1. Schröder, S., Morgenroth, T., Kuhl, U., Vaquet, V., & Paaßen, B. (2025). Large Language Models Do Not Simulate Human Psychology. *arXiv preprint arXiv:2508.06950*.
  - 2. Palminteri, S., & Pistilli, G. (2025). Navigating Inflationary and Deflationary Claims Concerning Large Language Models Avoiding Cognitive Biases.