

- Abramson CI, Wells H (2018) An Inconvenient Truth: Some Neglected Issues in Invertebrate Learning. *Perspect Behav Sci* 41:395-416. PMC6701716.
- Ackerknecht EH (1974) The history of the discovery of the vegetative (autonomic) nervous system. *Med Hist* 18:1-8. PMC1081519.
- Adams DB, Baccelli G, Mancia G, Zanchetti A (1971) Relation of cardiovascular changes in fighting to emotion and exercise. *J Physiol* 212:321-335. PMC1395657.
- Adams EJ, Nguyen AT, Cowan N (2018) Theories of Working Memory: Differences in Definition, Degree of Modularity, Role of Attention, and Purpose. *Lang Speech Hear Serv Sch* 49:340-355. PMC6105130.
- Alanen L (2003) Descartes's Concept of Mind. Cambridge, MA: Harvard University Press.
- Alberini CM, LeDoux JE (2013) Memory reconsolidation. *Curr Biol* 23: R746-750.
- Albert MV, Schnabel A, Field DJ (2008) Innate visual learning through spontaneous activity patterns. *PLoS Comput Biol* 4:e1000137. PMC2446436.
- Alcaraz AŁ (2019) Cyborg Person or Selves. Szczecin, Poland: Wydawnictwo Naukowe Wydziału Malarstwa i Nowych.
- Alcoff LM (2006) Visible Identities: Race, gender, and the self. New York: Oxford University Press.
- Alderson-Day B, Fernyhough C (2015) Inner Speech: Development, Cognitive Functions, Phenomenology, and Neurobiology. *Psychol Bull* 141:931-965. PMC4538954.
- Allik J, McCrae RR (2004) Toward a Geography of Personality Traits: Patterns of Profiles across 36 Cultures. *Journal of Cross-Cultural Psychology* 35:13-28.
- Allport GW (1967) Autobiography. In: A history of psychology in autobiography, vol. 5 (Boring, E. G. and Lindzey, G., eds), pp 1-25 New York: Appleton-Century-Crofts.
- Altman J (1966) Organic Foundations of Animal Behavior. New York: Holt, Rinehart and Winston.
- Amaral DG (2003) The amygdala, social behavior, and danger detection. *Ann N Y Acad Sci* 1000:337-347.
- Arbib MA (2012) How the Brain Got Language: The mirror system hypothesis. Oxford: Oxford University Press.
- Ardesch DJ, Scholtens LH, Li L, Preuss TM, Rilling JK, van den Heuvel MP (2019) Evolutionary expansion of connectivity between multimodal association areas in the human brain compared with chimpanzees. *Proc Natl Acad Sci U S A* 116:7101-7106. PMC6452697.
- Arendt D (2008) The evolution of cell types in animals: emerging principles from molecular studies. *Nat Rev Genet* 9:868-882.
- Arendt D, Tosches MA, Marlow H (2016) From nerve net to nerve ring, nerve cord and brain--evolution of the nervous system. *Nat Rev Neurosci* 17:61-72.
- Ariëns Kappers CU, Huber CG, Crosby EC (1936) The Comparative Anatomy of the Nervous System of Vertebrates, Including Man. New York: Macmillan Company.
- Atkinson RC, Shiffrin RM (1968) Human memory: A proposed system and its control processes. In: The Psychology of Learning and Motivation, vol. 2 (Spence, K. W. and Spence, J. T., eds), pp 89-195 New York: Academic Press.
- Atmanspacher H (2020) Quantum Approaches to Consciousness, <https://plato.stanford.edu/archives/sum2020/entries/qt-consciousness/>, retrieved Jan 4, 2022. In: Stanford Encyclopedia of Philosophy (Zalta, E. N., ed) Stanford University: Metaphysics Research Lab.
- Baars BJ (1988) A Cognitive Theory of Consciousness. New York: Cambridge University Press.
- Baars BJ (1997) In the theatre of consciousness. *Journal of Consciousness Studies* 4:292-309.
- Baars BJ (2005) Global workspace theory of consciousness: toward a cognitive neuroscience of human experience. *Prog Brain Res* 150:45-53.
- Bacon F (1620) *Instauratio Magna. Novum Organum*. London: John Brill: p. 68. Cited in Mandler and Kessen, 1964, *The Language of Psychology*. New York, John Wiley.
- Baddeley A (1992) Working memory. *Science* 255:556-559.
- Baddeley A (2000) The episodic buffer: a new component of working memory? *Trends Cogn Sci* 4:417-423.
- Baddeley A, Hitch GJ (1974) Working memory. In: The Psychology of Learning and Motivation vol 8 (Bower, G., ed), pp 47-89 New York: Academic Press.
- Baddeley AD, Allen RJ, Hitch GJ (2011) Binding in visual working memory: the role of the episodic buffer. *Neuropsychologia* 49:1393-1400.
- Badimon A, Strasburger HJ, Ayata P, Chen X, Nair A, Ikegami A, Hwang P, Chan AT, Graves SM, Uweru JO, Ledderose C, Kutlu MG, Wheeler MA, Kahan A, Ishikawa M, Wang YC, Loh YE, Jiang JX, Surmeier DJ, Robson SC, Junger WG, Sebra R, Calipari ES, Kenny PJ, Eyo UB, Colonna M, Quintana FJ, Wake H, Gradinaru V, Schaefer A (2020) Negative feedback control of neuronal activity by microglia. *Nature* 586:417-423. PMC7577179.

- Badre D, D'Esposito M (2009) Is the rostro-caudal axis of the frontal lobe hierarchical? *Nat Rev Neurosci* 10:659-669. PMC3258028.
- Bain A (1859) *The Emotions and the Will*. London: John W. Parker and Son, West Strand.
- Balleine BW (2018) Chapter 19 - The Motivation of Action and the Origins of Reward. In: *Goal-Directed Decision Making* (Morris, R. et al., eds), pp 429-455: Academic Press.
- Balleine BW (2019) The Meaning of Behavior: Discriminating Reflex and Volition in the Brain. *Neuron* 104:47-62.
- Balleine BW, Dickinson A (1998) Goal-directed instrumental action: contingency and incentive learning and their cortical substrates. *Neuropharmacology* 37:407-419.
- Balleine BW, O'Doherty JP (2010) Human and rodent homologies in action control: corticostriatal determinants of goal-directed and habitual action. *Neuropsychopharmacology* 35:48-69. PMC3055420.
- Bandura A (1977) *Social learning theory*. Englewood Cliffs, NJ: Prentice Hall.
- Bang D, Ershadmanesh S, Nili H, Fleming SM (2020) Private-public mappings in human prefrontal cortex. *Elife* 9. PMC7377905.
- Bang D, Fleming SM (2018) Distinct encoding of decision confidence in human medial prefrontal cortex. *Proc Natl Acad Sci U S A* 115:6082-6087. PMC6003322.
- Barack DL, Krakauer JW (2021) Two views on the cognitive brain. *Nat Rev Neurosci* 22:359-371.
- Barbas H, Garcia-Cabezas MA (2016) How the prefrontal executive got its stripes. *Current opinion in neurobiology* 40:125-134. PMC5056826.
- Baron GR (2020) What happens when a physicalist debates a panpsychist? , vol. 2021 <https://medium.com/science-and-philosophy/what-happens-when-a-physicalist-debates-a-panpsychist-533be0bb6216>, retrieved Feb 24, 2021: Medium.
- Baron-Cohen S, Leslie AM, Frith U (1985) Does the autistic child have a "theory of mind"? *Cognition* 21:37-46.
- Barrett LF (2017) How emotions are made. New York: Houghton Mifflin Harcourt.
- Barrett LF, Finlay BL (2018) Concepts, Goals and the Control of Survival-Related Behaviors. *Curr Opin Behav Sci* 24:172-179. PMC6541420.
- Barrett LF, Russell JA (eds.) (2015) *The psychological construction of emotion*. New York: Guilford Press.
- Barrett LF, Simmons WK (2015) Interoceptive predictions in the brain. *Nat Rev Neurosci* 16:419-429. PMC4731102.
- Barthes R (1986) *The Death of the Author*. In: *The Rustle of Language* (Barthes, R., ed) Los Angeles: University of California Press.
- Barto AG, Sutton RS, Watkins CJCH (1990) Learning and sequential decision making. In: *Learning and Computational Neuroscience: Foundations of adaptive networks* (Gabriel, M. and Moore, J. W., eds), pp 539-602 Cambridge, MA: MIT Press.
- Barton RA, Montgomery SH (2019) Proportional versus relative size as metrics in human brain evolution. *Proc Natl Acad Sci U S A* 116:3-4. PMC6320533.
- Bayne T (2018) On the axiomatic foundations of the integrated information theory of consciousness. *Neurosci Conscious* 2018:niy007. PMC6030813.
- Bechtel W (2022) Reductionistic Explanations of Cognitive Information Processing: Bottoming Out in Neurochemistry. *Front Integr Neurosci* 16:944303. PMC9292585.
- Bechtel W, Richardson RC (1998) Vitalism. In: *Routledge Encyclopedia of Philosophy* (Craig, E., ed): Taylor and Francis.
- Beck AT (1967) Depression: Clinical, Experimental, and Theoretical Aspects. New York: Harper & Row.
- Bedau M (1997) Weak Emergence. In: *Philosophical Perspectives: Mind, Causation and World*, vol. 11 (Tomberlin, J., ed), pp 375-399 Malden, MA: Blackwell.
- Behrendt RP (2013) Hippocampus and consciousness. *Rev Neurosci* 24:239-266.
- Behrens TEJ, Muller TH, Whittington JCR, Mark S, Baram AB, Stachenfeld KL, Kurth-Nelson Z (2018) What Is a Cognitive Map? Organizing Knowledge for Flexible Behavior. *Neuron* 100:490-509.
- Bekoff M (2000) Animal Emotions: Exploring Passionate Natures: Current interdisciplinary research provides compelling evidence that many animals experience such emotions as joy, fear, love, despair, and grief—we are not alone. *BioScience* 50:861-870.
- Benito-Gutierrez E, Gattoni G, Stemmer M, Rohr SD, Schuhmacher LN, Tang J, Marconi A, Jekely G, Arendt D (2021) The dorsoanterior brain of adult amphioxus shares similarities in expression profile and neuronal composition with the vertebrate telencephalon. *BMC Biol* 19:110. PMC8139002.
- Bennett MS (2021) Five Breakthroughs: A First Approximation of Brain Evolution From Early Bilaterians to Humans. *Front Neuroanat* 15:693346. PMC8418099.

- Behrens TEJ, Muller TH, Whittington JCR, Mark S, Baram AB, Stachenfeld KL, Kurth-Nelson Z (2018) What Is a Cognitive Map? Organizing Knowledge for Flexible Behavior. *Neuron* 100:490-509.
- Bellmund JL, Deuker L, Navarro Schroder T, Doeller CF (2016) Grid-cell representations in mental simulation. *Elife* 5. PMC5005038.
- Bellmund JLS, Gardenfors P, Moser EI, Doeller CF (2018) Navigating cognition: Spatial codes for human thinking. *Science* 362.
- Beran MJ, Hopkins WD (2018) Self-Control in Chimpanzees Relates to General Intelligence. *Curr Biol* 28:574-579 e573. PMC5820157.
- Bergstrom F, Eriksson J (2018) Neural Evidence for Non-conscious Working Memory. *Cereb Cortex* 28:3217-3228.
- Bernard C (1865 (translated 1961)) *An Introduction to the Study of Experimental Medicine*. New York: Collier.
- Bernard C (1878 (translated 1974)) *Lectures on the phenomena common to animals and plants*. Springfield, IL: Charles C. Thomas.
- Berns G (2022) *The Self Delusion: A new neuroscience of how we invent –and reinvent–identities*. New York, Basic Books.
- Berridge KC, Kringelbach ML. (2015) Pleasure systems in the brain. *Neuron* 86:646-64. doi: 10.1016/j.neuron.2015.02.018. PMID: 25950633; PMCID: PMC4425246.
- Bertucci P, Arendt D (2013) Somatic and visceral nervous systems - an ancient duality. *BMC Biol* 11:54. PMC3639815.
- Bichat X (1977) *Physiological Researches on Life and Death*. New York: Arno Press.
- Billman GE (2020) Homeostasis: The Underappreciated and Far Too Often Ignored Central Organizing Principle of Physiology. *Front Physiol* 11:200. PMC7076167.
- Binder JR, Desai RH (2011) The neurobiology of semantic memory. *Trends Cogn Sci* 15:527-536. PMC3350748.
- Binet A, Simon T (1905) Methodes nouvelles pour le diagnostic du niveau intellectuel des anormaux. *L'Annee Psychologique* 11:191-244.
- Birch J (2023) AI, invertebrates, and the risk of living absurdly. Guest blog at The Soothy Empiric. Retrieved March 30, 2023 from: <http://sootyempiric.blogspot.com/2023/03/ai-invertebrates-and-risk-of-living.html>.
- Birch J, Broom DM, Browning H, Crump A, Ginsburg S, Halina M, Harrison D, Jablonka E, Lee AY, Kammerer F, Klein C, Lamme V, Michel M, Wemelsfelder F, Zacks O (2022) How Should We Study Animal Consciousness Scientifically? *Journal of Consciousness Studies* 29:8-28.
- Birch J, Schnell AK, Clayton NS (2020) Dimensions of Animal Consciousness. *Trends Cogn Sci* 24:789-801. PMC7116194.
- Bishop CM (2013) Model-based machine learning. *Philos Trans A Math Phys Eng Sci* 371:20120222. PMC3538442.
- Bitterman ME (1975) The comparative analysis of learning. *Science* 188:699-709.
- Bitterman ME (2000) Cognitive evolution: A psychological perspective. In: *The evolution of cognition* (Heyes, C. and Huber, L., eds), pp 61-79 Cambridge, MA, US: The MIT Press.
- Bjorklund DF, Pellegrini AD (2002) *The Origins of Human Nature: Evolutionary developmental psychology*. Washington, DC: American Psychological Association.
- Blackburn S (2005) *The Oxford Dictionary of Philosophy*. Oxford: Oxford University Press.
- Blanchard DC, Blanchard RJ (1972) Innate and conditioned reactions to threat in rats with amygdaloid lesions. *J Comp Physiol Psych* 81:281-290.
- Blanchard EB, Young LD (1973) Self-control of cardiac functioning: a promise as yet unfulfilled. *Psychol Bull* 79:145-163.
- Blanchard RJ, Blanchard DC (1969) Crouching as an index of fear. *J Comp Physiol Psych* 67:370-375.
- Blessing B, Gibbins I (2008) Autonomic nervous system. *Scholarpedia* 3:2787.
- Blessing WW (1997) Inadequate frameworks for understanding bodily homeostasis. *Trends Neurosci* 20:235-239.
- Block J (1995) A contrarian view of the five-factor approach to personality description. *Psychol Bull* 117:187-215.
- Block N (1995) On a confusion about a function of consciousness. *Behavioral and Brain Sciences* 18:227-247.
- Block N (2002) Concepts of consciousness. In: *Philosophy of mind: Classical and contemporary readings* (Chalmers, D., ed), pp 206-218 New York: Oxford University Press.
- Block N (2007) Consciousness, accessibility, and the mesh between psychology and neuroscience. *Behav Brain Sci* 30:481-499; discussion 499-548.
- Block N (2011) Perceptual consciousness overflows cognitive access. *Trends Cogn Sci* 15:567-575.
- Blouw P, Solodkin E, Thagard P, Eliasmith C (2016) Concepts as Semantic Pointers: A Framework and Computational Model. *Cogn Sci* 40:1128-1162.
- Blumenfeld H (2021) Brain Mechanisms of Conscious Awareness: Detect, Pulse, Switch, and Wave. *The Neuroscientist* 0:10738584211049378.

- Blumenfeld RS, Ranganath C (2019) The lateral prefrontal cortex and human long-term memory. *Handb Clin Neurol* 163:221-235.
- Bolles RC, Fanselow MS (1980) A perceptual-defensive-recuperative model of fear and pain. *Behavioral and Brain Sciences* 3:291-323.
- Bolt T, Nomi JS, Yeo BTT, Uddin LQ (2017) Data-Driven Extraction of a Nested Model of Human Brain Function. *J Neurosci* 37:7263-7277. PMC5546402.
- Boorman ED, Behrens TE, Woolrich MW, Rushworth MF (2009) How green is the grass on the other side? Frontopolar cortex and the evidence in favor of alternative courses of action. *Neuron* 62:733-743.
- Bor D, Schwartzman DJ, Barrett AB, Seth AK (2017) Theta-burst transcranial magnetic stimulation to the prefrontal or parietal cortex does not impair metacognitive visual awareness. *PLoS One* 12:e0171793. PMC5305100.
- Boring EG (1950) A history of experimental psychology. New York: Appleton-Century-Crofts.
- Bornstein AM, Daw ND (2013) Cortical and hippocampal correlates of deliberation during model-based decisions for rewards in humans. *PLoS Comput Biol* 9:e1003387. PMC3854511.
- Bortolotti L (2018) Stranger than Fiction: Costs and Benefits of Everyday Confabulation. *Review of Philosophy and Psychology* 9:227-249.
- Bottani A, Davies R (eds.) (2013) Modes of Existence: Papers in ontology and philosophical logic. Berlin: De Gruyter.
- Bouchard TJ (1982) Reviewed work: The Intelligence Controversy. *The American Journal of Psychology* 95:346-349.
- Bramson B, den Ouden HE, Toni I, Roelofs K (2020) Improving emotional-action control by targeting long-range phase-amplitude neuronal coupling. *Elife* 9. PMC7591252.
- Bramson B, Folloni D, Verhagen L, Hartogsveld B, Mars RB, Toni I, Roelofs K (2020) Human Lateral Frontal Pole Contributions to Control over Emotional Approach-Avoidance Actions. *J Neurosci* 40:2925-2934. PMC7117901.
- Braun MN, Wessler J, Friese M (2021) A meta-analysis of Libet-style experiments. *Neuroscience and Biobehavioral Reviews* 128:182-198.
- Brentari C (2009) Konrad Lorenz's epistemological criticism towards Jakob von Uexküll. *Sign Systems Studies* 37:637.
- Brick C, Hood B, Ekroll V, de-Wit L (2021) Illusory Essences: A Bias Holding Back Theorizing in Psychological Science. *Perspect Psychol Sci* 17:45691621991838.
- Brodal A (1982) Neurological Anatomy. New York: Oxford University Press.
- Brodmann K (1909) Vergleichende Lokalisationslehre der Grosshirnrinde. Munich: Barth.
- Broniak CJ (1996) James's Theory of Fringes. *Transactions of the Charles S Peirce Society* 32:443-468.
- Brown R (2015) The HOROR theory of phenomenal consciousness. *Philosophical Studies* 172:1783-1794.
- Brown R, Lau H, LeDoux JE (2019) Understanding the Higher-Order Approach to Consciousness. *Trends Cogn Sci* 23:754-768.
- Brown R, LeDoux J (2020) Higher-order memory schema and consciousness experience. *Cogn Neuropsychol* 37:213-215.
- Browning H, Birch J (2022) Animal sentience. *Philos Compass* 17:e12822. PMC9285591.
- Bruner J (1987) Life as narrative. *Social Research* 54:11-32.
- Bruner J (1994) The "remembered" self. In: *The Remembering Self: Construction and Accuracy in the Self-Narrative* (Fivush, R. and Neisser, U., eds), pp 41-54 Cambridge: Cambridge University Press.
- Bruner J, Goodnow J, Austin G (1956) *A Study of Thinking*. New York: John Wiley & Sons, Inc.
- Bruner JS, Postman L (1949) On the perception of incongruity; a paradigm. *J Pers* 18:206-223.
- Brunet T, Arendt D (2016) From damage response to action potentials: early evolution of neural and contractile modules in stem eukaryotes. *Philos Trans R Soc Lond B Biol Sci* 371:20150043. PMC4685582.
- Buckner RL, Carroll DC (2007) Self-projection and the brain. *Trends Cogn Sci* 11:49-57.
- Budson AE, al. e (in press) Consciousness as a memory system. *Cognitive and Behavioral Neurology*.
- Bulley A, Henry JD, Suddendorf T (2017) Thinking about threats: Memory and prospection in human threat management. *Conscious Cogn* 49:53-69.
- Bundgaard PF (2007) The cognitive import of the narrative schema. *Semiotica* 2007:247-261.
- Burgess N (2008) Spatial cognition and the brain. *Ann N Y Acad Sci* 1124:77-97.
- Burgess N, Becker S, King JA, O'Keefe J (2001) Memory for events and their spatial context: models and experiments. *Philos Trans R Soc Lond B Biol Sci* 356:1493-1503. PMC1088531.
- Burgess PW, Dumontheil I, Gilbert SJ (2007) The gateway hypothesis of rostral prefrontal cortex (area 10) function. *Trends Cogn Sci* 11:290-298.

- Burghardt G (1991) Cognitive ethology and critical anthropomorphism: A snake with two heads and hognose snakes that play dead. In: *Cognitive ethology: The minds of other animals: Essays in honor of Donald R Griffin* (Ristau, C. A., ed), pp 53-90 Hillsdale, NJ: Lawrence Erlbaum Associates.
- Burghardt GM (2013) Environmental enrichment and cognitive complexity in reptiles and amphibians: Concepts, review, and implications for captive populations. *Applied Animal Behaviour Science* 147:286-298.
- Burnet FM, Fenner F (1949) *The Production of Antibodies*. Melbourne, Australia: Macmillan and Co., Ltd.
- Burton AC, Nakamura K, Roesch MR (2015) From ventral-medial to dorsal-lateral striatum: neural correlates of reward-guided decision-making. *Neurobiol Learn Mem* 117:51-59. PMC4240773.
- Buss LW (1987) *The evolution of individuality*. Princeton, NJ: Princeton University Press.
- Butler AB, Hodos W (2005) *Comparative Vertebrate Neuroanatomy: Evolution and Adaptation*. Hoboken: John Wiley & Sons, Inc.
- Buzsaki G (2022) How the brain 'constructs' the outside world. *Scientific American* 326:36-43.
- Buzsaki G, Moser EI (2013) Memory, navigation and theta rhythm in the hippocampal-entorhinal system. *Nature neuroscience* 16:130-138. PMC4079500.
- Calkins, Mary Whiton. (1915). The Self in Scientific Psychology. *American Journal of Psychology*, 26, 495-524
- Camhi JM (1984) *Neuroethology*. Sunderland, MA: Sinauer.
- Camos V (2017) Chapter Five - Domain-Specific Versus Domain-General Maintenance in Working Memory: Reconciliation Within the Time-Based Resource Sharing Model. In: *Psychology of Learning and Motivation*, vol. 67 (Ross, B. H., ed), pp 135-171: Academic Press.
- Camos V, Mora G, Oberauer K (2011) Adaptive choice between articulatory rehearsal and attentional refreshing in verbal working memory. *Mem Cognit* 39:231-244.
- Campbell DT (1974) 'Downward causation' in hierarchically organized biological systems. In: *Studies in the philosophy of biology: Reduction and related problems* (Ayala, F. et al., eds), pp 176-186 London: Macmillan.
- Cameron D, Kulick D (2003) *Language and Sexuality*. Cambridge: Cambridge University Press.
- Cannon WB (1929) Bodily changes in pain, hunger, fear, and rage. New York: Appleton.
- Cao L, Liang Y, Lv W, Park K, Miura Y, Shinomiya Y, Yoshida S (2021) Relating brain structure images to personality characteristics using 3D convolution neural network. *CAAI Transactions on Intelligence Technology* n/a.
- Cardinal RN, Parkinson JA, Hall J, Everitt BJ (2002) Emotion and motivation: the role of the amygdala, ventral striatum, and prefrontal cortex. *Neuroscience and Biobehavioral Reviews* 26:321-352.
- Carlson R (1971) Where is the person in personality research? *Psychol Bull* 75:203-219.
- Carnap R (1934) *The Unity of Science*. London: Kegan Paul, Trench, Trubner and Co.
- Carruthers P (2009) How we know our own minds: the relationship between mindreading and metacognition. *Behav Brain Sci* 32:121-138; discussion 138-182.
- Caruso G (2012) *Free Will and Consciousness*. Lanham, MD: Lexington Books.
- Cashin-Garbutt A (2018) Understanding the control of instinctive behaviour. (Centre, S. W., ed) <https://www.sainsburywellcome.org/web/qa/understanding-control-instinctive-behaviour>, retrieved Mar 1, 2021.
- Cechetto DF (2014) Cortical control of the autonomic nervous system. *Exp Physiol* 99:326-331.
- Cesario J, Johnson DJ, Eisthen HL (2020) Your Brain Is Not an Onion With a Tiny Reptile Inside. *Current Directions in Psychological Science* 29:255-260.
- Chai J, Ruan X, Huang J (2021) NLM-HS: Navigation Learning Model Based on a Hippocampal-Striatal Circuit for Explaining Navigation Mechanisms in Animal Brains. *Brain Sci* 11. PMC8235547.
- Chalmers D (1996) *The Conscious Mind*. New York: Oxford U. Press.
- Chalmers D (2008) Strong and Weak Emergence. In Philip Clayton, and Paul Davies (eds) *The Re-Emergence of Emergence: The Emergentist Hypothesis from Science to Religion*. Oxford, online edn, Oxford Academic, 3 Oct. 2011), <https://doi.org/10.1093/acprof:oso/9780199544318.003.0011>, accessed 9 Oct. 2022.
- Chalmers DJ (2022) *Reality+*: Virtual worlds and the problems of philosophy. New York: W. W. Norton & Company.
- Chalmers DJ (2023) The computational and the representational language of thought hypotheses. <https://philpapers.org/rec/CHATCA-21> (forthcoming in Behavioral and Brain Sciences).
- Charles L, Haggard P (2020) Feeling free: External influences on endogenous behaviour. *Q J Exp Psychol* (Hove) 73:568-577.
- Cheng S, Werning M, Suddendorf T (2016) Dissociating memory traces and scenario construction in mental time travel. *Neuroscience and Biobehavioral Reviews* 60:82-89.
- Chittka L (2022) *The Mind of a Bee*. Oxford: Princeton University Press.

- Chomsky N (1959) A Review of B. F. Skinner's Verbal Behavior. *Language* 35:26-58.
- Christoff K, Gabrieli JDE (2000) The frontopolar cortex and human cognition: Evidence for a rostrocaudal hierarchical organization within the human prefrontal cortex. *Psychobiology* 28:168-186.
- Churchland P (1988) Reduction and the neurobiological basis of consciousness. In: *Consciousness in contemporary science* (Marcel, A. and Bisiach, E., eds) Oxford: Oxford U. Press.
- Churchland PM (1984) Matter and consciousness. Cambridge, MA: MIT Press.
- Ciaunica A and Levin M (2022) The brain is not mental! Coupling of Immune Cellular Processing in Human Organisms. <https://psyarxiv.com/fgcy5/>
- Cisek P (2019) Resynthesizing behavior through phylogenetic refinement. *Atten Percept Psychophys* 81:2265-2287. PMC6848052.
- Cisek P (2022) Evolution of behavioural control from chordates to primates. *Philos Trans R Soc Lond B Biol Sci* 377:20200522. PMC8710891.
- Clark A (2000) *A Theory of Sentience*. New York: Oxford University Press.
- Clark A (2008) *Supersizing the Mind: Embodiment, action, and cognitive extension*. Oxford: Oxford University Press.
- Clark A (2013) Whatever next? Predictive brains, situated agents, and the future of cognitive science. *Behav Brain Sci* 36:181-204.
- Clarke DD, Sokoloff L (1999) Circulation and Energy Metabolism of the Brain. In: *Basic Neurochemistry*, 6th Ed (Siegel, G. J. et al., eds) Philadelphia: Lippincott-Raven.
- Clayton N, Dickinson A (2006) Rational rats. *Nature neuroscience* 9:472-474.
- Clayton NS, Dickinson A (1998) Episodic-like memory during cache recovery by scrub jays. *Nature* 395:272-274.
- Clayton NS, Dickinson A (1999) Memory for the content of caches by scrub jays (*Aphelocoma coerulescens*). *J Exp Psychol Anim Behav Process* 25:82-91.
- Clayton NS, Dickinson A (2010) Mental Time Travel: Can Animals Recall the Past and Plan for the Future? A2 - Breed, Michael D. In: *Encyclopedia of Animal Behavior* (Moore, J., ed), pp 438-442 Oxford: Academic Press.
- Clayton NS, Griffiths DP, Emery NJ, Dickinson A (2001) Elements of episodic-like memory in animals. *Philos Trans R Soc Lond B Biol Sci* 356:1483-1491. PMC1088530.
- Cleeremans A (2008) Consciousness: the radical plasticity thesis. *Prog Brain Res* 168:19-33.
- Cleeremans A, Achoui D, Beauny A, Keuninckx L, Martin JR, Munoz-Moldes S, Vuillaume L, de Heering A (2020) Learning to Be Conscious. *Trends Cogn Sci* 24:112-123.
- Cloninger CR (2002) The discovery of susceptibility genes for mental disorders. *Proc Natl Acad Sci U S A* 99:13365-13367. PMC129675.
- Clore GL, Ortony A (2013) Psychological Construction in the OCC Model of Emotion. *Emotion Review* 5:335-343.
- Cocchi L, Zalesky A, Fornito A, Mattingley JB (2013) Dynamic cooperation and competition between brain systems during cognitive control. *Trends Cogn Sci* 17:493-501.
- Cohen DH, Obrist PA (1975) Interactions between Behavior and the Cardiovascular System. *Circulation Research* 37(6):693-706.
- Cohen NJ, Squire L (1980) Preserved learning and retention of pattern-analyzing skill in amnesia: Dissociation of knowing how and knowing that. *Science* 210:207-209.
- Cohen SM (2004) Aristotle on the Soul, <https://faculty.washington.edu/smcohen/320/psyche.htm>, retrieved Jan 8, 2021. Washington.edu.
- Cole D (2020) The Chinese Room Argument. In: *Stanford Encyclopedia of Philosophy* (Zalta, E. N., ed) <https://stanford.library.sydney.edu.au/entries/chinese-room/>: Metaphysics Research Lab, Stanford University.
- Collins S (1985) 'Categories, concepts or predicaments?: remarks on Mauss's use of philosophical terminology'. In: *The Category of the Person: Anthropology, Philosophy, History* (Carrithers, M. et al., eds), pp 46-82 Cambridge: Cambridge University Press.
- Colwill RM, Rescorla RA (1985) Instrumental responding remains sensitive to reinforcer devaluation after extensive training. *Journal of Experimental Psychology: Animal Behavior Processes* 11:520-536.
- Conaco C, Bassett DS, Zhou H, Arcila ML, Degnan SM, Degnan BM, Kosik KS (2012) Functionalization of a protosynaptic gene expression network. *Proc Natl Acad Sci U S A* 109 Suppl 1:10612-10618. PMC3386881.
- Constantinescu AO, O'Reilly JX, Behrens TE. 2016. Organizing conceptual knowledge in humans with a gridlike code. *Science* 352(6292):1464-68
- Conway MA (2009) Episodic memories. *Neuropsychologia* 47:2305-2313.
- Conway MA, Pleydell-Pearce CW (2000) The construction of autobiographical memories in the self-memory system. *Psychol Rev* 107:261-288.

- Cooper WE (1992) William James's Theory of the Self. *The Monist* 75:504-520.
- Corballis M (2014) The Gradual Evolution of Language. *HumanaMente Journal of Philosophical Studies* 7:39-60.
- Corballis MC (2007) The Uniqueness of Human Recursive Thinking. *American Scientist* 95:240.
- Corfield PJ (2021) Monthly Blog 121, Being Assessed as a Whole Person - A Critique of Identity Politics. In: Current Affairs <https://www.penelopejcorfield.com/being-assessed-as-a-whole-person-a-critique-of-identity-politics/>, retrieved
- Corkin S (1968) Acquisition of motor skill after bilateral medial temporal lobe excision. *Neuropsychologia* 6:255-265.
- Costa KM, Scholz R, Lloyd K, Moreno-Castilla P, Gardner MPH, Dayan P, Schoenbaum G (2022) The role of the orbitofrontal cortex in creating cognitive maps. *bioRxiv* 2022.2001.2025.477716.
- Cowan N (1995) Attention and memory: An integrated framework. New York: Oxford University Press.
- Cowell RA, Bussey TJ, Saksida LM (2010) Components of recognition memory: dissociable cognitive processes or just differences in representational complexity? *Hippocampus* 20:1245-1262.
- Craik KJW (1943) The Nature of Explanation. Cambridge: Cambridge University Press.
- Craik KJW (1966) The nature of animal behaviour. In: *The nature of psychology* (Sherwood, S. L., ed), p 143 New York: Cambridge University Press.
- Crick F (1994) The Astonishing Hypothesis: The Scientific Search for the Soul. New York: Touchstone Books.
- Crick F, Koch C (1990) Towards a neurobiological theory of consciousness. *Semin Neurosci* 2:263-275.
- Crick F, Koch C (1992) The problem of consciousness. *Sci Am* 267:152-159.
- Crick F, Koch C (1995) Are we aware of neural activity in primary visual cortex? *Nature* 375:121-123.
- Crick F, Koch C (1998) Consciousness and neuroscience. *Cereb Cortex* 8:97-107.
- Crivelli D, Balconi M (2017) The Agent Brain: A Review of Non-invasive Brain Stimulation Studies on Sensing Agency. *Front Behav Neurosci* 11:229. PMC5701922.
- Crump A, Birch J (2021) Separating conscious and unconscious perception in animals. *Learn Behav* 49:347-348.
- Cruz KG, Leow YN, Le NM, Adam E, Huda R, Sur M (2022) Cortical-Subcortical Interactions in Goal-directed Behavior. *Physiol Rev.*
- Culbreth AJ, Westbrook A, Daw ND, Botvinick M, Barch DM (2016) Reduced model-based decision-making in schizophrenia. *J Abnorm Psychol* 125:777-787. PMC4980177.
- Curtis CE, D'Esposito M (2003) Persistent activity in the prefrontal cortex during working memory. *Trends Cogn Sci* 7:415-423.
- Dafni-Merom A, Arzy S (2020) The radiation of autonoetic consciousness in cognitive neuroscience: A functional neuroanatomy perspective. *Neuropsychologia* 143:107477.
- Damasio A (1994) Descarte's error: Emotion, reason, and the human brain. New York: Gosset/Putnam.
- Damasio A (2010) Self Comes to Mind: Constructing the conscious brain. New York: Pantheon Books.
- Damasio A, Carvalho GB (2013) The nature of feelings: evolutionary and neurobiological origins. *Nat Rev Neurosci* 14:143-152.
- Damasio AR (1989) The brain binds entities and events by multiregional activation from convergence zones. *Neural Computation* 1:123-132.
- Damasio AR (1999) The feeling of what happens: Body and emotion in the making of consciousness. New York: Harcourt Brace.
- Damasio H, Grabowski T, Frank R, Galaburda AM, Damasio AR (1994) The return of Phineas Gage: clues about the brain from the skull of a famous patient. *Science* 264:1102-1105.
- Dang J, King KM, Inzlicht M (2020) Why Are Self-Report and Behavioral Measures Weakly Correlated? *Trends Cogn Sci* 24:267-269. PMC7977810.
- Danziger K (1997) The historical formation of selves. In: *Self and identity: Fundamental issues*, pp 137-159 New York, NY, US: Oxford University Press.
- Danziger K (1997) Naming the Mind: How psychology found its language. London: Sage Publications, Ltd.
- D'Argembeau AD, Salmon E (2012) The neural basis of semantic and episodic forms of self-knowledge: Insights from functional neuroimaging. In: *Sensing in Nature* (Lopez-Larrea, C., ed), pp 276-290 Austin, TX: Springer Science+Business Media, LLC, Landes Bioscience.
- Darwin C (1871) *The Descent of Man, and Selection in Relation to Sex*. London: John Murray, Albemarle Street.
- Davies KJ (2016) Adaptive homeostasis. *Mol Aspects Med* 49:1-7. PMC4868097.
- Davis M (1990) Animal models of anxiety based on classical conditioning: the conditioned emotional response (CER) and the fear-potentiated startle effect. *Pharmacol Ther* 47:147-165.

- Daw ND, Gershman SJ, Seymour B, Dayan P, Dolan RJ (2011) Model-based influences on humans' choices and striatal prediction errors. *Neuron* 69:1204-1215. PMC3077926.
- Daw ND, Niv Y, Dayan P (2005) Uncertainty-based competition between prefrontal and dorsolateral striatal systems for behavioral control. *Nature neuroscience* 8:1704-1711.
- Dawkins R (1976) *The Selfish Gene*. New York: Oxford University Press.
- Dawkins R (1996) *The Blind Watchmaker*. New York: Norton.
- Dawkins R, Krebs JR (1979) Arms races between and within species. *Proceedings of the Royal Society of London Series B, Containing papers of a Biological character*. Royal Society 205:489-511.
- Dayan P (2002) Reinforcement learning. In: Steven's handbook of experimental psychology: Learning, motivation, and emotion, Vol 3, 3rd ed, pp 103-129 Hoboken, NJ, US: John Wiley & Sons Inc.
- De Brigard F (2014) Is memory for remembering? Recollection as a form of episodic hypothetical thinking. *Synthese* 191:155-185.
- De Brigard F, Nathan Spreng R, Mitchell JP, Schacter DL (2015) Neural activity associated with self, other, and object-based counterfactual thinking. *Neuroimage* 109:12-26. PMC4710471.
- de Lecea L (2021) Twenty-Three Years of Hypocretins: The "Rosetta Stone" of Sleep/Arousal Circuits. *Front Neurol Neurosci* 45:1-10.
- De Neys W (2022) Advancing theorizing about fast-and-slow thinking. *Behav Brain Sci* 1-68.
- de Waal FBM (1999) Anthropomorphism and Anthropodenial: Consistency in Our Thinking about Humans and Other Animals. *Philosophical Topics* 27:255-280.
- Decker JH, Otto AR, Daw ND, Hartley CA (2016) From Creatures of Habit to Goal-Directed Learners: Tracking the Developmental Emergence of Model-Based Reinforcement Learning. *Psychol Sci* 27:848-858. PMC4899156.
- Dehaene S, Changeux J-P (2004) Neural Mechanisms for Access to Consciousness. In: *The Cognitive Neurosciences*, 3rd Edition (Gazzaniga, M. S., ed), pp 1145-1158 Cambridge: MIT Press.
- Dehaene S, Changeux JP (2011) Experimental and theoretical approaches to conscious processing. *Neuron* 70:200-227.
- Dehaene S, Changeux J-P, Naccache L (2011) The Global Neuronal Workspace Model of Conscious Access: From Neuronal Architectures to Clinical Applications. In: *Characterizing Consciousness: From Cognition to the Clinic?* (Dehaene, S. and Christen, Y., eds), pp 55-84 Berlin, Heidelberg: Springer Berlin Heidelberg.
- Dehaene S, Charles L, King JR, Marti S (2014) Toward a computational theory of conscious processing. *Current opinion in neurobiology* 25:76-84. PMC5635963.
- Dehaene S, Lau H, Kouider S (2017) What is consciousness, and could machines have it? *Science* 358:486-492.
- Dehaene S, Naccache L (2001) Towards a cognitive neuroscience of consciousness: basic evidence and a workspace framework. *Cognition* 79:1-37.
- Dehaene S, Naccache L, Cohen L, Bihan DL, Mangin JF, Poline JB, Riviere D (2001) Cerebral mechanisms of word masking and unconscious repetition priming. *Nature neuroscience* 4:752-758.
- Dehaene S, Sergent C, Changeux JP (2003) A neuronal network model linking subjective reports and objective physiological data during conscious perception. *Proc Natl Acad Sci U S A* 100:8520-8525.
- Delgado MR, Li J, Schiller D, Phelps EA (2008) The role of the striatum in aversive learning and aversive prediction errors. *Philos Trans R Soc Lond B Biol Sci* 363:3787-3800. PMC2607367.
- Dennett DC (1991) *Consciousness explained*. Boston: Little, Brown and Company.
- Dennett DC (1992) The Self as a Center of Narrative Gravity. In: *Self and Consciousness: Multiple Perspectives* (Kessel, F. et al., eds), pp 103-115 Hillsdale, NJ: Erlbaum.
- Dennett, D.C. (1995) *Darwin's Dangerous Idea*, New York: Simon and Schuster.
- Dennett DC (1996) *Kinds of Minds: Toward an understanding of consciousness*. New York: Basic Books.
- Dennett DC (1997) Facing Backwards on the Problem of Consciousness. In: *Explaining Consciousness - The 'Hard Problem'* (Shear, J., ed), pp 33-36 Cambridge, MA: The MIT Press.
- Dennett DC (2017) *From Bacteria to Bach and Back: The evolution of minds*. New York: W. W. Norton & Company, Inc.
- Dennett DC, Caruso GD (2021) *Just Deserts: Debating Free Will*. Medford, MA: Polity Press.
- Descartes R (1637) *Discourse on the Method*. Indianapolis: Hackett.
- DeVito LM, Lykken C, Kanter BR, Eichenbaum H (2010) Prefrontal cortex: role in acquisition of overlapping associations and transitive inference. *Learn Mem* 17:161-167. PMC2832922.
- Dezfouli A, Balleine BW (2012) Habits, action sequences and reinforcement learning. *Eur J Neurosci* 35:1036-1051. PMC3325518.
- Diamond J (1997) *Guns, Germs, and Steel: The fates of human societies*. New York: W. W. Norton & Co.

- Dickinson A (1980) Contemporary Animal Learning Theory. Cambridge: Cambridge Univ. Press.
- Dickinson A (1985) Action and Habits: The development of behavioural autonomy. *Philosophical Transactions of the Royal Society of London, Series B, Biological Sciences* 308:67-78.
- Dickinson A (2008) Why a rat is not a beast machine. In: *Frontiers of Consciousness* (Weiskrantz, L. and Davies, M., eds), pp 275-288 Oxford: Oxford University Press.
- Dickinson A (2011) Goal-Directed Behavior and Future Planning in Animals. In: *Animal Thinking: Contemporary Issues in Comparative Cognition* (Menzel, R. and Fischer, J., eds): The MIT Press.
- Dickinson A (2012) Associative learning and animal cognition. *Philos Trans R Soc Lond B Biol Sci* 367:2733-2742. PMC3427555.
- Dickinson A, Balleine BW (1994) Motivational control of goal-directed action. *Animal Learning and Behavior* 22.
- Dienes Z (2008) Subjective measures of unconscious knowledge. *Prog Brain Res* 168:49-64.
- Dienes Z (2021) Is there a self? [https://youtu.be/hMJHk\\_tu1Ac](https://youtu.be/hMJHk_tu1Ac).
- Dijksterhuis A, Nordgren LF (2006) A Theory of Unconscious Thought. *Perspect Psychol Sci* 1:95-109.
- Dijkstra N, Kok P, Fleming SM (2022) Perceptual reality monitoring: Neural mechanisms dissociating imagination from reality. *Neuroscience and Biobehavioral Reviews* 135:104557.
- Ding J, Chen K, Liu H, Huang L, Chen Y, Lv Y, Yang Q, Guo Q, Han Z, Lambon Ralph MA (2020) A unified neurocognitive model of semantics language social behaviour and face recognition in semantic dementia. *Nat Commun* 11:2595. PMC7244491.
- Dobzhansky T, Hecht MK, Steere WC (eds.) (1972) Evolutionary Biology: Volume 6. New York: Springer US.
- Dodds EM (2018) Statistical learning models of sensory processing and implications of biological constraints. Retrieved from <https://escholarship.org/uc/item/1c05d34t>: UC Berkeley.
- Doeller CF, Barry C, Burgess N. 2010. Evidence for grid cells in a human memory network. *Nature* 463(7281):657-61
- Dolan RJ (2007) The human amygdala and orbital prefrontal cortex in behavioural regulation. *Philos Trans R Soc Lond B Biol Sci* 362:787-799. PMC2429997.
- Dolan RJ, Dayan P (2013) Goals and habits in the brain. *Neuron* 80:312-325. PMC3807793.
- Dolan RJ, Vuilleumier P (2003) Amygdala automaticity in emotional processing. *Ann N Y Acad Sci* 985:348-355.
- Dominik T, Dostal D, Zielina M, Smahaj J, Sedlackova Z, Prochazka R (2017) Libet's experiment: Questioning the validity of measuring the urge to move. *Conscious Cogn* 49:255-263.
- Donahue CJ, Glasser MF, Preuss TM, Rilling JK, Van Essen DC (2018) Quantitative assessment of prefrontal cortex in humans relative to nonhuman primates. *Proc Natl Acad Sci U S A* 115:E5183-E5192. PMC5984508.
- Donahue CJ, Glasser MF, Preuss TM, Rilling JK, Van Essen DC (2019) Reply to Barton and Montgomery: A case for preferential prefrontal cortical expansion. *Proc Natl Acad Sci U S A* 116:5-6. PMC6320522.
- Du Toit C (2016) Panpsychism, pan-consciousness and the non-human turn: Rethinking being as conscious matter. HTS Teologiese Studies / Theological Studies 72.
- Duff MC, Covington NV, Hilverman C, Cohen NJ (2019) Semantic Memory and the Hippocampus: Revisiting, Reaffirming, and Extending the Reach of Their Critical Relationship. *Front Hum Neurosci* 13:471. PMC6993580.
- Ebert T, Gebauer JE, Brenner T, Bleidorn W, Gosling SD, Potter J, Rentfrow PJ (2021) Are Regional Differences in Psychological Characteristics and Their Correlates Robust? Applying Spatial-Analysis Techniques to Examine Regional Variation in Personality. *Perspect Psychol Sci* 17:456-1621998326.
- Edelman GM (1989) The Remembered Present. New York: Basic Books.
- Edinger L (1908) Vorlesungen über den Bau der nervosen Zentralorgane. Leipzig: Vogel.
- Egger MD, Flynn JP (1963) Effects of Electrical Stimulation of the Amygdala on Hypothalamically Elicited Attack Behavior in Cats. *J Neurophysiol* 26:705-720.
- Eichenbaum H (2000) Hippocampus: mapping or memory? *Curr Biol* 10:R785-787.
- Eichenbaum H (2017) Prefrontal-hippocampal interactions in episodic memory. *Nat Rev Neurosci* 18:547-558.
- Eichenbaum H, Yonelinas AP, Ranganath C (2007) The medial temporal lobe and recognition memory. *Annu Rev Neurosci* 30:123-152. PMC2064941.
- Einstein G, Flanagan O (2003) Sexual identities and narratives of self. In: *Narrative and Consciousness: Literature, psychology and the brain* (Fireman, G. D. et al., eds), pp 209-231 New York: Oxford University Press.
- Ekman P (1992) An argument for basic emotions. *Cognition and Emotion* 6:169-200.
- Elliot P (1987) Vivisection and the emergence of experimental medicine in nineteenth century France. In: *Vivisection in Historical Perspective* (Rupke, N., ed) New York: Croom Helm.

- Elman J, Bates E, Johnson M, Karmiloff-Smith A, Parisi D, Plunkett K (1997) Rethinking Innateness. Cambridge, MA: MIT Press.
- Enel P, Wallis JD, Rich EL (2020) Stable and dynamic representations of value in the prefrontal cortex. *Elife* 9. PMC7390599.
- Epstein RA, Baker CI (2019) Scene Perception in the Human Brain. *Annu Rev Vis Sci* 5:373-397. PMC6989029.
- Ericsson KA, Simon HA (1980) Verbal reports as data. *Psychological review* 87:215-251.
- Erwin D (2007) The Developmental Origins of Animal Bodyplans. In: *Neoproterozoic Geobiology and Paleobiology*, vol. 27 (Xiao, S. and Kaufman, A. J., eds), pp 159-197 Berlin: Springer.
- Erwin D, Valentine J (2013) The Cambrian Explosion: The construction of animal biodiversity: W. H. Freeman.
- Evans JS (2008) Dual-processing accounts of reasoning, judgment, and social cognition. *Annu Rev Psychol* 59:255-278.
- Evans JS, Stanovich KE (2013) Dual-Process Theories of Higher Cognition: Advancing the Debate. *Perspect Psychol Sci* 8:223-241.
- Evans JSBT (2009) Introspection, confabulation, and dual-process theory. *Behavioral and Brain Sciences* 32:142-143.
- Everitt BJ, Robbins TW (2016) Drug Addiction: Updating Actions to Habits to Compulsions Ten Years On. *Annu Rev Psychol* 67:23-50.
- Eysenck HJ, Kamin L (1981) *The Intelligence Controversy*. New York: Wiley.
- Falup-Pecurariu C, Diaconu S, Tint D, Falup-Pecurariu O (2021) Neurobiology of sleep (Review). *Exp Ther Med* 21:272. PMC7851648.
- Fanselow MS, Lester LS (1988) A functional behavioristic approach to aversively motivated behavior: predatory imminence as a determinant of the topography of defensive behavior. In: *Evolution and Learning* (Bolles, R. C. and Beecher, M. D., eds), pp 185-211 Hillsdale, NJ: Erlbaum.
- Fanselow MS, Pennington ZT (2017) The Danger of LeDoux and Pine's Two-System Framework for Fear. *Am J Psychiatry* 174:1120-1121.
- Fanselow MS, Pennington ZT (2018) A return to the psychiatric dark ages with a two-system framework for fear. *Behav Res Ther* 100:24-29. PMC5794606.
- Fanselow MS, Poulos AM (2005) The neuroscience of mammalian associative learning. *Annu Rev Psychol* 56:207-234.
- Farovik A, Place RJ, McKenzie S, Porter B, Munro CE, Eichenbaum H (2015) Orbitofrontal cortex encodes memories within value-based schemas and represents contexts that guide memory retrieval. *J Neurosci* 35:8333-8344. PMC4444550.
- Fedderspil G, Sicolo N (1994) The nature of life in the history of medical and philosophic thinking. *Am J Nephrol* 14:337-343.
- Feinberg TE (2001) *Altered egos: How the brain creates the self*. New York: Oxford University Press.
- Feinberg TE (2011) The nested neural hierarchy and the self. *Conscious Cogn* 20:4-15.
- Fernyhough C (2013) Inner speech. In: *The encyclopedia of the mind*, vol. 9 (Pashler, H., ed), pp 418-420 Thousand Oaks, CA: Sage Publications.
- Fernyhough C, Meins E (2009) Private Speech and Theory of Mind: Evidence for developing interfunctional relations. In: *Private Speech, Executive Functioning, and the Development of Verbal Self-Regulation* (Winsler, A. et al., eds), pp 95-104 Cambridge, UK: Cambridge University Press.
- Ferretti F, Adornetti I, Chiera A, Nicchiarelli S, Magni R, Valeri G, Marini A (2017) Mental Time Travel and language evolution: a narrative account of the origins of human communication. *Language Sciences* 63:105-118.
- Festinger L (1957) A theory of cognitive dissonance. Evanston: Row Peterson.
- Fine JM, Hayden BY (2022) The whole prefrontal cortex is premotor cortex. *Philos Trans R Soc Lond B Biol Sci* 377:20200524. PMC8710885.
- Fireman GD, McVay TE, Flanagan OJ (eds.) (2003) *Narrative and Consciousness: Literature, psychology and the brain*. Oxford: Oxford University Press.
- Fiske AP (2020) The lexical fallacy in emotion research: Mistaking vernacular words for psychological entities. *Psychol Rev* 127:95-113.
- Flanagan O (1991) *The Science of the Mind*. Cambridge: MIT Press.
- Flanagan O (2011) Neuroscience: Knowing and feeling. *Nature* 469:160-161.
- Flanagan O (2021) *How to Do Things with Emotions: Anger and shame across cultures*. Princeton, NJ: Princeton University Press.
- Flanagan O (1996) *Self Expressions: Minds, morals, and the meaning of life*. Oxford: Oxford University Press.
- Flavell JH (1979) Metacognition and cognitive monitoring: A new area of cognitive-developmental inquiry. *Am Psychol* 34:906-911.

- Flavell JH (1999) Cognitive development: children's knowledge about the mind. *Annu Rev Psychol* 50:21-45.
- Fleming SM (2020) Awareness as inference in a higher-order state space. *Neurosci Conscious* 2020:niz020. PMC7065713.
- Fleming SM (2021) Know Thyself: The science of self-awareness. New York: Basic Books.
- Fleming SM (2021) A theory of my own mind. <https://aeon.co/essays/is-there-a-symmetry-between-metacognition-and-mindreading>, retrieved Jan 3, 2022: Aeon.
- Fleming SM, Daw ND (2017) Self-evaluation of decision-making: A general Bayesian framework for metacognitive computation. *Psychol Rev* 124:91-114. PMC5178868.
- Fleming SM, Dolan RJ (2012) The neural basis of metacognitive ability. *Philos Trans R Soc Lond B Biol Sci* 367:1338-1349. PMC3318765.
- Fleming SM, Lau HC (2014) How to measure metacognition. *Front Hum Neurosci* 8:443. PMC4097944.
- Fleming SM, Ryu J, Golfinos JG, Blackmon KE (2014) Domain-specific impairment in metacognitive accuracy following anterior prefrontal lesions. *Brain* 137:2811-2822. PMC4163038.
- Fleming SM, van der Putten EJ, Daw ND (2018) Neural mediators of changes of mind about perceptual decisions. *Nature neuroscience* 21:617-624. PMC5878683.
- Fleming SM, Weil RS, Nagy Z, Dolan RJ, Rees G (2010) Relating introspective accuracy to individual differences in brain structure. *Science* 329:1541-1543. PMC3173849.
- Fletcher A, Gaines T (2021) The Limits of Logic: Why Narrative Thinking is Better Suited to the Demands of Modern Combat. Modern War Institute.
- Fletcher GJO (1995) Two uses of folk psychology: Implications for psychological science. *Philosophical Psychology* 8:221-238.
- Fodor J (1975) The language of thought. Cambridge, MA: Harvard University Press.
- Fodor J (1991) Too hard for our kind of mind? London Review of Books.<https://www.lrb.co.uk/the-paper/v13/n12/jerry-fodor/too-hard-for-our-kind-of-mind>
- Fodor JA, Pylyshyn ZW. 1988. Connectionism and cognitive architecture: a critical analysis. *Cognition* 28(1– 2):3–71
- Folse HJ, 3rd, Roughgarden J (2010) What is an individual organism? A multilevel selection perspective. *Q Rev Biol* 85:447-472.
- Fox KC, Spreng RN, Ellamil M, Andrews-Hanna JR, Christoff K (2015) The wandering brain: meta-analysis of functional neuroimaging studies of mind-wandering and related spontaneous thought processes. *Neuroimage* 111:611-621.
- Fox MD, Snyder AZ, Vincent JL, Corbetta M, Van Essen DC, Raichle ME (2005) The human brain is intrinsically organized into dynamic, anticorrelated functional networks. *Proc Natl Acad Sci U S A* 102:9673-9678. PMC1157105.
- Frankland SM, Greene JD (2020) Concepts and Compositionality: In Search of the Brain's Language of Thought. *Annu Rev Psychol* 71:273-303.
- Freeman M (2003) Rethinking the fictive, reclaiming the real: Autobiography, narrative time, and the burden of truth. In: *Narrative and Consciousness: Literature, psychology, and the brain* (Fireman, G. et al., eds), pp 115-128 New York: Oxford University Press.
- Frijda N (1986) The Emotions. Cambridge: Cambridge University Press.
- Friston KJ, Frith CD (2015) Active inference, communication and hermeneutics. *Cortex* 68:129-143. PMC4502445.
- Frith C (2007) Making Up the Mind: How the brain creates our mental world. Malden, MA: Blackwell Publishing.
- Frith C, Frith U (2005) Theory of mind. *Curr Biol* 15: R644-646.
- Frith C, Perry R, Lumer E (1999) The neural correlates of conscious experience: an experimental framework. *Trends in cognitive sciences* 3:105-114.
- Frith CD (2008) The social functions of consciousness. In: *Frontiers of Consciousness: Chichele lectures* (Weiskrantz, L. and Davies, M., eds), pp 225-244 Oxford: Oxford University Press.
- Frith CD (2012) The role of metacognition in human social interactions. *Philos Trans R Soc Lond B Biol Sci* 367:2213-2223. PMC3385688.
- Frith CD, Frith U (2007) Social cognition in humans. *Curr Biol* 17: R724-732.
- Frith CD, Frith U (2022) The mystery of the brain-culture interface. *Trends Cogn Sci*.
- Funke CM, Borowski J, Stosio K, Brendel W, Wallis TS, Bethge M (2020) Five Points to Check when Comparing Visual Perception in Humans and Machines. 2004.09406: arXiv.
- Furness JB (2006) The Enteric Nervous System. Malden, MA: Blackwell Publishing.
- Furness JB (2007) Enteric nervous system. Scholarpedia 2:4064.

- Fuster J (2008) The Prefrontal Cortex. New York: Academic Press.
- Gallagher S (2000) Philosophical conceptions of the self: implications for cognitive science. *Trends Cogn Sci* 4:14-21.
- Gallagher S (2013) A Pattern Theory of Self. *Frontiers in Human Neuroscience* 7.
- Gallagher S, Daly A (2018) Dynamical Relations in the Self-Pattern. *Front Psychol* 9:664. PMC5958307.
- Gallagher S, Zahavi D (2021) Phenomenological Approaches to Self-Consciousness. In: The Stanford Encyclopedia of Philosophy (Zalta, E. N., ed) <https://plato.stanford.edu/archives/spr2021/entries/self-consciousness-phenomenological/>; Metaphysics Research Lab, Stanford University.
- Galton F (1883) Inquiries into human faculty and its development. London: Macmillan and Co.
- Galton F (1884) Measurement of character. *Fortnightly Review* 36:179-185.
- Galton F (1909) Essays in Eugenics. London: The Eugenics Education Society.
- Gannon PJ, Kheck NM, Braun AR, Holloway RL (2005) Planum parietale of chimpanzees and orangutans: a comparative resonance of human-like planum temporale asymmetry. *Anat Rec A Discov Mol Cell Evol Biol* 287:1128-1141.
- Garcia J, Kimeldorf DJ, Koelling RA (1955) Conditioned aversion to saccharin resulting from exposure to gamma radiation. *Science* 122:157-158.
- Garcia-Cabezas MA, Hacker JL, Zikopoulos B (2022) Homology of neocortical areas in rats and primates based on cortical type analysis: an update of the Hypothesis on the Dual Origin of the Neocortex. *Brain Struct Funct*.
- Garcia-Cabezas MA, Zikopoulos B, Barbas H (2019) The Structural Model: a theory linking connections, plasticity, pathology, development and evolution of the cerebral cortex. *Brain Struct Funct* 224:985-1008. PMC6500485.
- Gardner H (1987) The mind's new science: A history of the cognitive revolution. New York: Basic Books, Inc.
- Garrett BJ (2006) What the History of Vitalism Teaches Us About Consciousness and the "Hard Problem"1. *Philosophy and Phenomenological Research* 72:576-588.
- Gazzaniga MS The Bisected Brain. New York: Plenum.
- Gazzaniga MS One brain--two minds? (1972) *American Scientist*. 60:311-317.
- Gazzaniga MS (1985) The Social Brain. New York: Basic Books.
- Gazzaniga MS (2012) Who's in Charge?: Free Will and the Science of the Brain. New York: HarperCollins.
- Gazzaniga MS (2015) Tales from both sides of the brain: A life in neuroscience. New York: Ecco/HarperCollins.
- Gazzaniga MS (2018) The Consciousness Instinct: Unraveling the mystery of how the brain makes the mind: Farrar, Straus and Giroux.
- Gazzaniga MS, LeDoux JE (1978) The Integrated Mind. New York: Plenum.
- Gendler TS (2008) Alief and Belief. *The Journal of Philosophy* 105:634-663.
- Gentner D (2002) Mental models, Psychology of. In: International Encyclopedia of the Social and Behavioral Sciences (Smelser, N. J. and Bates, P. B., eds), pp 9683-9687 Amsterdam: Elsevier Science.
- Gershman SJ (2019) The Generative Adversarial Brain. *Frontiers in Artificial Intelligence* 2.
- Gershon MD (1999) The enteric nervous system: a second brain. *Hosp Pract* (1995) 34:31-32, 35-38, 41-32 passim.
- Gershon MD (2010) Developmental determinants of the independence and complexity of the enteric nervous system. *Trends Neurosci* 33:446-456.
- Gibbins I (2013) Functional organization of autonomic neural pathways. *Organogenesis* 9:169-175. PMC3896588.
- Gibson JJ (1979) The Ecological Approach to Visual Perception. Boston: Houghton Mifflin.
- Gibson WT, Gonzalez CR, Fernandez C, Ramasamy L, Tabachnik T, Du RR, Felsen PD, Maire MR, Perona P, Anderson DJ (2015) Behavioral responses to a repetitive visual threat stimulus express a persistent state of defensive arousal in *Drosophila*. *Curr Biol* 25:1401-1415. PMC4452410.
- Gilbert SF, Sapp J, Tauber AI (2012) A symbiotic view of life: we have never been individuals. *Q Rev Biol* 87:325-341.
- Gilboa A, Alain C, Stuss DT, Melo B, Miller S, Moscovitch M (2006) Mechanisms of spontaneous confabulations: a strategic retrieval account. *Brain* 129:1399-1414.
- Gilboa A, Marlatt H (2017) Neurobiology of Schemas and Schema-Mediated Memory. *Trends Cogn Sci* 21:618-631.
- Gilboa A, Moscovitch M (2017) Ventromedial prefrontal cortex generates pre-stimulus theta coherence desynchronization: A schema instantiation hypothesis. *Cortex* 87:16-30.
- Gill C (2017) the self in Greek literature. Oxford University Press.
- Ginsburg S, Jablonka E (2010) The evolution of associative learning: A factor in the Cambrian explosion. *J Theor Biol* 266:11-20.
- Ginsburg S, Jablonka E (2019) The Evolution of the Sensitive Soul. Cambridge, MA: The MIT Press.
- Ginsburg S, Jablonka E (2021) Evolutionary transitions in learning and cognition. *Philos Trans R Soc Lond B Biol Sci* 376:20190766. PMC7935133.

- Girn M, Christoff K (2019) Expanding the Scientific Study of Self-Experience with Psychedelics. *Journal of Consciousness Studies* 25:131-154.
- Gisquet-Verrier P, Delatour B (2006) The role of the rat prelimbic/infralimbic cortex in working memory: not involved in the short-term maintenance but in monitoring and processing functions. *Neuroscience* 141:585-596.
- Giurfa M (2012) Social learning in insects: a higher-order capacity? *Front Behav Neurosci* 6:57. PMC3433704.
- Giurfa M (2013) Cognition with few neurons: higher-order learning in insects. *Trends Neurosci* 36:285-294.
- Giurfa M (2015) Learning and cognition in insects. *Wiley Interdiscip Rev Cogn Sci* 6:383-395.
- Giurfa M, Sandoz JC (2012) Invertebrate learning and memory: Fifty years of olfactory conditioning of the proboscis extension response in honeybees. *Learn Mem* 19:54-66.
- Glanzman DL (2010) Common mechanisms of synaptic plasticity in vertebrates and invertebrates. *Curr Biol* 20:R31-36.
- Glascher J, Daw N, Dayan P, O'Doherty JP (2010) States versus rewards: dissociable neural prediction error signals underlying model-based and model-free reinforcement learning. *Neuron* 66:585-595. PMC2895323.
- Glimcher PW, Fehr E (eds.) (2013) *Neuroeconomics: Decision making and the brain*, 2nd Ed. London: Academic Press.
- Godfrey-Smith P (2009) *Darwinian Populations and Natural Selection*. Oxford: Oxford University Press.
- Godfrey-Smith P (2013) *Darwinian Individuals*. In: *From Groups to Individuals: Evolution and emerging individuality* (Bouchard, F. and Huneman, P., eds), pp 17-36 Cambridge, MA: The MIT Press.
- Godfrey-Smith P (2016) *Other Minds: The octopus, the sea, and the deep origins of consciousness*. New York: Farrar, Straus and Giroux.
- Godfrey-Smith P (2020) *Metazoa: Animal minds and the birth of consciousness*. Glasgow, Scotland: William Collins.
- Gold JI, Shadlen MN (2007) The neural basis of decision making. *Annu Rev Neurosci* 30:535-574.
- Goldberg LR (1990) An alternative "description of personality": the big-five factor structure. *J Pers Soc Psychol* 59:1216-1229.
- Goldman-Rakic PS (1987) Circuitry of primate prefrontal cortex and regulation of behavior by representational memory. In: *Handbook of Physiology Section 1: The Nervous System Vol V, Higher Functions of the Brain* (Plum, F., ed), pp 373-418 Bethesda: American Physiological Society.
- Goldstein D (2009) Walter Cannon: Homeostasis, the Fight-or-Flight Response, the Sympathoadrenal System, and the Wisdom of the Body.
- Gordon-Roth J (2020) Locke on Personal Identity. In: *The Stanford Encyclopedia of Philosophy* (Zalta, E. N., ed) <https://plato.stanford.edu/archives/spr2020/entries/locke-personal-identity/>: Metaphysics Research Lab, Stanford University.
- Gottschall J (2013) *The Storytelling Animal: How stories make us human*. New York: Houghton Mifflin Harcourt Publishing Company.
- Gould JL (1982) *Ethology: The mechanisms and evolution of behavior*. New York: Norton.
- Gould SJ (1981) *The Mismeasure of Man*. New York: W. W. Norton & Company.
- Grabenhorst F, Rolls ET, Parris BA (2008) From affective value to decision-making in the prefrontal cortex. *Eur J Neurosci* 28:1930-1939.
- Graf P, Schacter DL (1985) Implicit and explicit memory for new associations in normal and amnesic subjects. *J Exp Psychol Learn Mem Cogn* 11:501-518.
- Grant SG (2016) The molecular evolution of the vertebrate behavioural repertoire. *Philos Trans R Soc Lond B Biol Sci* 371:20150051. PMC4685586.
- Gray JA (ed.) (1964) *Pavlov's Typology*. New York: Elsevier.
- Graybiel AM (2008) Habits, rituals, and the evaluative brain. *Annu Rev Neurosci* 31:359-387.
- Graybiel AM, Grafton ST (2015) The striatum: where skills and habits meet. *Cold Spring Harb Perspect Biol* 7:a021691. PMC4526748.
- Graziano MSA (2020) Consciousness and the attention schema: Why it has to be right. *Cogn Neuropsychol* 37:224-233.
- Graziano MSA (2021) Understanding consciousness. *Brain* 144:1281-1283.
- Greenspan RJ (2007) *An Introduction to Nervous Systems*. New York: Cold Spring Harbor Laboratory Press.
- Gregory RL (1983) Forty Years On: Kenneth Craik's The Nature of Explanation (1943). *Perception* 12:233-237.
- Griffin DR (2001) *Animal Minds: Beyond cognition to consciousness*. Chicago: University of Chicago Press.
- Griffiths PE (2008) History of ethology comes of age. *Biol Philos* 33:129-134.
- Grillner S, Parker D, el Manira A (1998) Vertebrate locomotion--a lamprey perspective. *Ann N Y Acad Sci* 860:1-18.
- Grosberg RK, Strathmann RR (2007) The Evolution of Multicellularity: A minor major transition? *Annual Review of Ecology, Evolution, and Systematics* 38:621-654.

- Gross CT, Canteras NS (2012) The many paths to fear. *Nat Rev Neurosci* 13:651-658.
- Gunturkun O, Bugnyar T (2016) Cognition without Cortex. *Trends Cogn Sci* 20:291-303.
- Gutnick T, Weissenbacher A, Kuba MJ (2020) The underestimated giants: operant conditioning, visual discrimination and long-term memory in giant tortoises. *Anim Cogn* 23:159-167.
- Haber SN, Knutson B (2010) The reward circuit: linking primate anatomy and human imaging. *Neuropsychopharmacology* 35:4-26.
- Haeckel E (1904) *The Wonders of Life: A popular study of biological philosophy*. London: Watts & Co.
- Hafting T, Fyhn M, Molden S, Moser MB, Moser EI (2005) Microstructure of a spatial map in the entorhinal cortex. *Nature* 436(7052):801-6
- Haggard P (2017) Sense of agency in the human brain. *Nat Rev Neurosci* 18:196-207.
- Haigh E (1975) The roots of the vitalism of Xavier Bichat. *Bull Hist Med* 49:72-86.
- Haldane JBS (1991) The origin of life (1929) in the Rationalist Annual. In: *On Being the Right Size and Other Essays* (Smith, J. M., ed) Oxford: Oxford University Press.
- Halilova JG, Addis DR, Rosenbaum RS (2020) Getting better without memory. *Social Cognitive and Affective Neuroscience* 15:815-825.
- Hall CS, Lindzey G, Campbell JB (1998) *Theories of Personality*. New York: John Wiley & Sons.
- Hall MI, Kamilar JM, Kirk EC (2012) Eye shape and the nocturnal bottleneck of mammals. *Proc Biol Sci* 279:4962-4968. PMC3497252.
- Hameroff S (1998) Quantum computation in brain microtubules? The Penrose-Hameroff 'Orch OR' model of consciousness. *Phil Trans R Soc A* 356:1869-1896.
- Hampson S (1988) *The Construction of Personality*. London: Routledge.
- Happe F, Frith U (2020) Annual Research Review: Looking back to look forward - changes in the concept of autism and implications for future research. *J Child Psychol Psychiatry* 61:218-232.
- Harari YN (2015) *Sapiens: A brief history of humankind*. London: HarperCollins.
- Harre R (1984) *Personal Being: A theory for individual psychology*. Cambridge, MA: Harvard University Press.
- Harrison NA, Gray MA, Gianaros PJ, Critchley HD (2010) The embodiment of emotional feelings in the brain. *J Neurosci* 30:12878-12884. PMC3044882.
- Hartley T, Lever C, Burgess N, O'Keefe J (2014) Space in the brain: how the hippocampal formation supports spatial cognition. *Philos Trans R Soc Lond B Biol Sci* 369:20120510. PMC3866435.
- Hatfield G (2018) René Descartes, <https://plato.stanford.edu/archives/sum2018/entries/descartes/>; retrieved Jan 4, 2022. In: *Stanford Encyclopedia of Philosophy* (Zalta, E. N., ed) Stanford University: Metaphysics Research Lab.
- He BJ (2018) Robust, Transient Neural Dynamics during Conscious Perception. *Trends Cogn Sci* 22:563-565.
- Hearne L, Cocchi L, Zalesky A, Mattingley JB (2015) Interactions between default mode and control networks as a function of increasing cognitive reasoning complexity. *Hum Brain Mapp* 36:2719-2731. PMC6869606.
- Hebb DO (1949) *The Organization of Behavior*. New York: John Wiley and Sons.
- Hebb DO (1958) Alice in Wonderland or Psychology among the biological sciences. In: *Biological and biochemical bases of behavior* (Harlow, H. F. and Woolsey, C. N., eds), pp 451-467 Madison: University of Wisconsin Press.
- Heisenberg M (2015) Outcome learning, outcome expectations, and intentionality in Drosophila. *Learn Mem* 22:294-298. PMC4436651.
- Henseler I, Kruger S, Dechent P, Gruber O (2011) A gateway system in rostral PFC? Evidence from biasing attention to perceptual information and internal representations. *Neuroimage* 56:1666-1676.
- Hering E (1870) Ueber das Gedächtnis als eine allgemeine Funktion der organisierten Materie (Memory as a general function of organized matter). In: *Vortrag gehalten in der feierlichen Sitzung der Kaiserlichen Akademie der Wissenschaften in Wien am XXX* Vienna: Leipzig.
- Herrnstein RJ, Murray C (1994) *The Bell Curve: Intelligence and class structure in American Life*. New York: Free Press.
- Herzog MH, Drissi-Daoudi L, Doerig A (2020) All in Good Time: Long-Lasting Postdictive Effects Reveal Discrete Perception. *Trends Cogn Sci* 24:826-837.
- Hess WR (1928) Stammganglien-Reizversuche. Berichte der gesamten Physiologie 42:554-555.
- Hess WR, Akert K (1955) Experimental data on role of the hypothalamus in mechanisms of emotional behavior. *Archives of Neurology and Psychiatry* 73:127-129.
- Heyes C (2008) Beast machines? Questions of animal consciousness. In: *Frontiers of Consciousness: Chichelle lectures* (Weiskrantz, L. and Davies, M., eds), pp 259-274 Oxford: Oxford University Press.

- Heyes C, Bang D, Shea N, Frith CD, Fleming SM (2020) Knowing Ourselves Together: The Cultural Origins of Metacognition. *Trends Cogn Sci* 24:349–362. PMC7903141.
- Heyes CM (1995) Self-recognition in primates: further reflections create a hall of mirrors. *Animal Behaviour* 50:1533–1542.
- Heyes CM, Frith CD (2014) The cultural evolution of mind reading. *Science* 344:1243091.
- Hayliken F (1992) Non-Rational Cognitive Processes as Changes of Distinctions. In: *New Perspectives on Cybernetics: Self-Organization, Autonomy and Connectionism*, vol. 220 (Van de Vijver, G., ed), pp 77–94 Dordrecht, The Netherlands: Kluwer Academic Publishers.
- Hills TT (2006) Animal foraging and the evolution of goal-directed cognition. *Cogn Sci* 30:3–41.
- Hills TT (2011) The evolutionary origins of cognitive control. *Top Cogn Sci* 3:231–237.
- Hills TT, Dukas R (2012) The Evolution of Cognitive Search. In: *Cognitive Search: Evolution, algorithms, and the brain* (Todd, P. M. et al., eds), pp 11–24 Cambridge, MA: The MIT Press.
- Hills TT, Jones MN, Todd PM (2012) Optimal foraging in semantic memory. *Psychol Rev* 119:431–440.
- Hills TT, Todd PM, Goldstone RL (2008) Search in external and internal spaces: evidence for generalized cognitive search processes. *Psychol Sci* 19:802–808.
- Hills TT, Todd PM, Goldstone RL (2010) The central executive as a search process: priming exploration and exploitation across domains. *J Exp Psychol Gen* 139:590–609. PMC2974337.
- Hills TT, Todd PM, Lazer D, Redish AD, Couzin ID, Cognitive Search Research G (2015) Exploration versus exploitation in space, mind, and society. *Trends Cogn Sci* 19:46–54. PMC4410143.
- Hilton SM, Zbrozyna AW (1963) Amygdaloid region for defense reactions and its efferent pathway to the brainstem. *J Physiol* 165:160–173.
- Hobson JA (1999) *Dreaming as Delirium*. Cambridge, MA: MIT Press.
- Hodos W, Campbell CBG (1969) Scala naturae: Why there is no theory in comparative psychology. *Psychol Rev* 76:337–350.
- Hoenig MP, Zeidel ML (2014) Homeostasis, the milieu interieur, and the wisdom of the nephron. *Clin J Am Soc Nephrol* 9:1272–1281. PMC4078957.
- Hofmann SG and Doan SN (2018) *The Social Foundations of Emotion*. Washington DC: American Psychological Association.
- Holland LZ (2015) The origin and evolution of chordate nervous systems. *Philos Trans R Soc Lond B Biol Sci* 370. PMC4650125.
- Holland LZ, Carvalho JE, Escrivá H, Laudet V, Schubert M, Shimeld SM, Yu JK (2013) Evolution of bilaterian central nervous systems: a single origin? *EvoDevo* 4:27. PMC3856589.
- Holland ND (2003) Early central nervous system evolution: an era of skin brains? *Nat Rev Neurosci* 4:617–627.
- Holland PC (2008) Cognitive versus stimulus-response theories of learning. *Learning & behavior* 36:227–241. PMC3065938.
- Holland PC, Rescorla RA (1975) The effect of two ways of devaluating the unconditioned stimulus after first- and second-order appetitive conditioning. *J Exp Psychol Anim Behav Process* 1:355–363.
- Holland PC, Schiffino FL (2016) Mini-review: Prediction errors, attention and associative learning. *Neurobiol Learn Mem* 131:207–215. PMC4862921.
- Holub G (2016) Human Enhancement, the Person, and Posthuman Personhood. *Ethics & Medicine: An International Journal of Bioethics* 32.
- Hood B (2012) *The Self Illusion: How the social brain creates identity*. New York: Oxford University Press.
- Hubel DH, Wiesel TN (2005) *Brain and Visual Perception: The story of a 25-year collaboration*. Oxford: Oxford University Press.
- Hugdahl K (1981) The three-systems-model of fear and emotion--a critical examination. *Behav Res Ther* 19:75–85.
- Hull CL (1943) *Principles of behavior*. New York: Appleton-Century-Crofts.
- Hull CL (1952) *A Behavior System: An introduction to behavior theory concerning the individual organism*. New Haven: Yale University.
- Hull D (1992) Individual. In: *Keywords in evolutionary biology* (Keller, E. F. and Lloyd, E. A., eds) Cambridge, MA: Harvard University Press.
- Hunsperger RW (1956) Affektreaktionen auf elektrische Reizung im Hirnstamm der Katze. *Helv Physiol Pharmacol Acta* 14:70–92.
- Hutto D (2007) The Narrative Practice Hypothesis: Origins and Applications of Folk Psychology. *Royal Inst Philos Suppl* 60:43–68.

- Hyman SE (2012) Revolution stalled. *Sci Transl Med* 4:155cm111.
- Inoue M (2007) Language and gender in an age of neoliberalism. *Gender and Language* 1:79-91.
- Insel T, Cuthbert B, Garvey M, Heinssen R, Pine DS, Quinn K, Sanislow C, Wang P (2010) Research domain criteria (RDoC): toward a new classification framework for research on mental disorders. *Am J Psychiatry* 167:748-751.
- Irish M, Piguet O, Hodges JR (2012) Self-projection and the default network in frontotemporal dementia. *Nat Rev Neurol* 8:152-161.
- Ito J, Howe J (2017) Emergent Systems are Changing the Way We Think. <https://www.aspeninstitute.org/blog-posts/emergent-systems-changing-way-think/>: Aspen Institute.
- Ivanov I, Schwartz JM (2018) Computational Psychiatry of Emotions the Promise of it and Where it May Lead us. *Acta Psychopathol* 4.
- Ivanov I, Schwartz JM (2021) Why Psychotropic Drugs Don't Cure Mental Illness-But Should They? *Front Psychiatry* 12:579566. PMC8057300.
- Izard CE (1992) Basic emotions, relations among emotions, and emotion-cognition relations. *Psychological review* 99:561-565.
- Izquierdo A, Suda RK, Murray EA (2004) Bilateral orbital prefrontal cortex lesions in rhesus monkeys disrupt choices guided by both reward value and reward contingency. *J Neurosci* 24:7540-7548. PMC6729636.
- Izquierdo A, Suda RK, Murray EA (2005) Comparison of the effects of bilateral orbital prefrontal cortex lesions and amygdala lesions on emotional responses in rhesus monkeys. *J Neurosci* 25:8534-8542. PMC6725674.
- Jackendoff R (2007) Language, Consciousness, Culture: Essays on Mental Structure. Cambridge: MIT Press.
- Jackson JC, Watts J, Henry TR, List JM, Forkel R, Mucha PJ, Greenhill SJ, Gray RD, Lindquist KA (2019) Emotion semantics show both cultural variation and universal structure. *Science* 366:1517-1522.
- Jacob F (1977) Evolution and tinkering. *Science* 196:1161-1166.
- Jacobs LF (2022) How the evolution of air breathing shaped hippocampal function. *Philos Trans R Soc Lond B Biol Sci* 377:20200532. PMC8710879.
- Jacobsen CF (1936) Studies of cerebral function in primates. I. The functions of the frontal associations areas in monkeys. *Comp Psychol Monogr* 13:3-60.
- Jakel S, Dimou L (2017) Glial Cells and Their Function in the Adult Brain: A Journey through the History of Their Ablation. *Front Cell Neurosci* 11:24. PMC5303749.
- James W (1884) What is an emotion? *Mind* 9:188-205.
- James W (1890) Principles of Psychology. New York: Holt.
- James W (1892) Psychology: Brief course. New York: Henry Holt and Company.
- James W (1902) The Varieties of Religious Experience: A study in human nature. New York: Longmans, Green & Co.
- Jarrett C (2020) Consciousness: how can we solve the greatest mystery in science? <https://www.sciencefocus.com/the-human-body/consciousness-how-can-we-solve-the-greatest-mystery-in-science/>, retrieved Feb 24, 2021: BBC Science Focus Magazine.
- Jaynes J (1976) The origin of consciousness in the breakdown of the bicameral mind. Boston: Houghton Mifflin Company.
- Jekely G (2011) Origin and early evolution of neural circuits for the control of ciliary locomotion. *Proc Biol Sci* 278:914-922. PMC3049052.
- Jekely G (2021) The chemical brain hypothesis for the origin of nervous systems. *Philos Trans R Soc Lond B Biol Sci* 376:20190761. PMC7935135.
- Johnson M (2008) What Makes a Body? *The Journal of Speculative Philosophy* 22:159-169.
- Johnson M (2017) Embodied Mind, Meaning, and Reason: How our bodies give rise to understanding. Chicago: University of Chicago Press.
- Johnson MK (1992) MEM: Mechanisms of Recollection. *J Cogn Neurosci* 4:268-280.
- Johnson-Laird PN (1983) Mental Models: Towards a cognitive science of language, inference, and consciousness. Cambridge, MA: Harvard University Press.
- Johnson-Laird PN (2010) Mental models and human reasoning. *Proc Natl Acad Sci U S A* 107:18243-18250. PMC2972923.
- Johnson-Laird PN (2013) Mental models and cognitive change. *Journal of Cognitive Psychology* 25:131-138.
- Jones EG, Powell TPS (1970) An anatomical study of converging sensory pathways within the cerebral cortex of the monkey. *Brain* 93:793-820.
- Kaas JH (1995) The evolution of isocortex. *Brain Behav Evol* 46:187-196.

- Kaas JH (2013) The evolution of brains from early mammals to humans. *Wiley Interdiscip Rev Cogn Sci* 4:33-45. PMC3606080.
- Kaas JH (2017) The Evolution of Mammalian Brains from Early Mammals to Present-Day Primates. In: *Evolution of the Brain, Cognition, and Emotion in Vertebrates* (Watanabe, S. et al., eds), pp 59-80 Tokyo: Springer.
- Kaas JH, Herculano-Houzel S (2017) What Makes the Human Brain Special: Key Features of Brain and Neocortex. In: *The Physics of the Mind and Brain Disorders: Integrated Neural Circuits Supporting the Emergence of Mind* (Opris, I. and Casanova, M. F., eds), pp 3-22 Cham: Springer International Publishing.
- Kaas JH, Qi HX, Stepniewska I (2022) Escaping the nocturnal bottleneck, and the evolution of the dorsal and ventral streams of visual processing in primates. *Philos Trans R Soc Lond B Biol Sci* 377:20210293. PMC8710890.
- Kagan J (1994) Galen's Prophecy: Temperament in Human Nature. New York: Basic Books.
- Kahneman D (2011) Thinking, Fast and Slow. New York: Farrar, Straus and Giroux.
- Kalin NH, Shelton SE, Davidson RJ (2004) The role of the central nucleus of the amygdala in mediating fear and anxiety in the primate. *J Neurosci* 24:5506-5515.
- Kanaya HJ, Park S, Kim JH, Kusumi J, Krenenou S, Sawatari E, Sato A, Lee J, Bang H, Kobayakawa Y, Lim C, Itoh TQ (2020) A sleep-like state in Hydra unravels conserved sleep mechanisms during the evolutionary development of the central nervous system. *Sci Adv* 6. PMC7541080.
- Kandel ER (2001) The molecular biology of memory storage: a dialog between genes and synapses. *Biosci Rep* 21:565-611.
- Karklin Y, Lewicki MS (2005) A hierarchical Bayesian model for learning nonlinear statistical regularities in nonstationary natural signals. *Neural Comput* 17:397-423.
- Karplus JP, Kreidl A (1910) Gehirn und Sympathicus. II Ein Sympathicus-Zen-trum in Zwischenhirn. *Arch Ges Physiol* 135:401.
- Kastner S, Pinsk MA (2004) Visual attention as a multilevel selection process. *Cogn Affect Behav Neurosci* 4:483-500.
- Keiflin R, Janak PH (2015) Dopamine Prediction Errors in Reward Learning and Addiction: From Theory to Neural Circuitry. *Neuron* 88:247-263. PMC4760620.
- Keller FS (1973) The Definition of Psychology. New York: Appleton-Century-Crofts.
- Kelley CM, Jacoby LL (1996) Adult egocentrism: Subjective experience versus analytic bases for judgment. *Journal of Memory and Language* 35:157-175.
- Kelley HH (1992) Common-Sense Psychology and Scientific Psychology. *Ann Rev Psychol* 43:1-24.
- Kemerling G (2011) Philosophy Pages. <http://philosophypages.com/hy/2f.htm>.
- Kennedy JS (1992) The New Anthropomorphism. New York: Cambridge University Press.
- Kennerley SW, Wallis JD (2009) Encoding of reward and space during a working memory task in the orbitofrontal cortex and anterior cingulate sulcus. *J Neurophysiol* 102:3352-3364. PMC2804408.
- Key B (2015) Fish do not feel pain and its implications for understanding phenomenal consciousness. *Biol Philos* 30:149-165. PMC4356734.
- Kiani R, Cueva CJ, Reppas JB, Newsome WT (2014) Dynamics of neural population responses in prefrontal cortex indicate changes of mind on single trials. *Curr Biol* 24:1542-1547. PMC4191655.
- Kihlstrom JF (1987) The Cognitive Unconscious. *Science* 237:1445-1452.
- Kim J (2005) Physicalism, or Something Near Enough. Princeton, NJ: Princeton University Press.
- Kimble GA (ed.) (1967) Foundations of Conditioning and Learning. New York: Appleton-Century-Crofts.
- Kingston LN (2019) Fully Human: Personhood, Citizenship, and Rights. Oxford: Oxford University Press.
- Klein SA (2002) Libet's temporal anomalies: a reassessment of the data. *Conscious Cogn* 11:198-214; discussion 314-125.
- Klein SB (2015) The feeling of personal ownership of one's mental states: A conceptual argument and empirical evidence for an essential, but underappreciated, mechanism of mind. *Psychology of Consciousness: Theory, Research, and Practice* 2:355-376.
- Kluckhohn C, Murray HA (eds.) (1948) Personality in Nature, Society, and Culture. New York: Alfred A. Knopf.
- Knell A, Codling E (2012) Classifying area-restricted search (ARS) using a partial sum approach. *Theoretical Ecology* 5:325-339.
- Knoll E (1997) Dogs, Darwinism, and English Sensibilites. In: *Anthropomorphism, Anecdotes, and Animals* (Mitchell, R. W. et al., eds), pp 12-21 Albany: State University of New York Press.
- Knowlton BJ, Diedrichsen J (2018) Editorial overview: Habits and skills. *Current Opinion in Behavioral Sciences* 20:iv-vi.
- Knudsen EB, Wallis JD (2021) Hippocampal neurons construct a map of an abstract value space. *Cell* 184:4640-4650 e4610. PMC8459666.

- Koban L, Gianaros PJ, Kober H, Wager TD (2021) The self in context: brain systems linking mental and physical health. *Nat Rev Neurosci* 22:309-322.
- Koch C (2004) The quest for consciousness: A neurobiological approach. Denver, Co.: Roberts and Co.
- Koch C (2019) *The Feeling of Life Itself: Why consciousness is widespread but can't be computed*. Cambridge, MA: The MIT Press.
- Koch C, Tsuchiya N (2007) Phenomenology without conscious access is a form of consciousness without top-down attention. *Behav Brain Sci* 30:509-510.
- Koch SBJ, Mars RB, Toni I, Roelofs K (2018) Emotional control, reappraised. *Neuroscience and Biobehavioral Reviews* 95:528-534.
- Koechlin E (2011) Frontal pole function: what is specifically human? *Trends Cogn Sci* 15:241; author reply 243.
- Koechlin E, Hyafil A (2007) Anterior prefrontal function and the limits of human decision-making. *Science* 318:594-598.
- Korhasan ND, Eryilmaz A, Erkoc S (2018) The Role of Metacognition in Students' Mental Models of the Quantization. *Science Education International* 29.
- Koriat A (2007) Metacognition and consciousness. In: *The Cambridge Handbook of Consciousness* (Thompson, E. et al., eds) Cambridge: Cambridge University Press.
- Kosslyn SM, Koenig O (1992) Wet mind: The new cognitive neuroscience. New York: Macmillan, Inc.
- Kotter R, Meyer N (1992) The limbic system: a review of its empirical foundation. *Behavioural Brain Research* 52:105-127.
- Kováč L (2008) Bioenergetics: A key to brain and mind. *Commun Integr Biol* 1:114-122. PMC2633811.
- Krakauer JW, Ghazanfar AA, Gomez-Marin A, MacIver MA, Poeppel D (2017) Neuroscience Needs Behavior: Correcting a Reductionist Bias. *Neuron* 93:480-490.
- Kriegel U (2004) The functional role of consciousness: A phenomenological approach. *Phenomenology and the Cognitive Sciences* 3:171-193.
- Kronfeldner M (2018) *What's Left of Human Nature?* A post-essentialist, pluralist, and interactive account of a contested concept. Cambridge, MA: MIT Press.
- Kurki VAJ (2019) *A Theory of Legal Personhood*. Oxford: Oxford University Press.
- Kurzweil R (2012) *How to Create a Mind: The secret of human thought revealed*. New York: Viking.
- Labrador FJ (2004) Skinner and the rise of behavior modification and behavior therapy. *Span J Psychol* 7:178-187.
- LaFollette H, Shanks N (1994) Animal experimentation: The legacy of Claude Bernard. *International Studies in the Philosophy of Science* 8:195-210.
- Laing J (1937) Host-Finding by Insect Parasites. 1. Observations on the Finding of Hosts by Alycia manducator, *Mormoniella vitripennis* and *Trichogramma evanescens*. *Journal of Animal Ecology* 6:298-317.
- Lamme V (2015) The Crack of Dawn: Perceptual functions and neural mechanisms that mark the transition from unconscious processing to conscious vision. In: *Open MIND* (Metzinger, T. and Windt, J. M., eds), pp 847-880 Cambridge, MA: The MIT Press.
- Lamme VA (2006) Towards a true neural stance on consciousness. *Trends Cogn Sci* 10:494-501.
- Lamme VAF (2020) Visual Functions Generating Conscious Seeing. *Front Psychol* 11:83. PMC7034432.
- Lane D (2006) Hierarchy, Complexity, Society. In: *Hierarchy in Natural and Social Sciences* (Pumain, D., ed), pp 81-119 New York: Springer-Verlag.
- Lane N (2015) The unseen world: reflections on Leeuwenhoek (1677) 'Concerning little animals'. *Philos Trans R Soc Lond B Biol Sci* 370. PMC4360124.
- Lane T (2012) Toward an explanatory framework for mental ownership. *Phenomenology and the Cognitive Sciences* 11:251-286.
- Lang PJ (1969) The mechanics of desensitization and the laboratory study of human fear. In: *Assessment and status of the behavior therapies* (Franks, C., ed), pp 160-191 New York: McGraw-Hill.
- Lang PJ, Davis M (2006) Emotion, motivation, and the brain: reflex foundations in animal and human research. *Prog Brain Res* 156:3-29.
- Langman RE, Cohn M (2000) Editorial introduction. *Seminars in Immunology* 12:159-162.
- Lara AH, Kennerley SW, Wallis JD (2009) Encoding of gustatory working memory by orbitofrontal neurons. *J Neurosci* 29:765-774. PMC2768394.
- LaRock E, Schwartz J, Ivanov I, Carreón D (2020) A Strong Emergence Hypothesis of Conscious Integration and Neural Rewiring. *International Philosophical Quarterly* 60:97-115.

- Lashley K (1950) The problem of serial order in behavior. In: Cerebral mechanisms in behavior (Jeffers, L. A., ed), pp 112-146 New York: Wiley.
- Lau H (2019) Consciousness, Metacognition, & Perceptual Reality Monitoring. PsyArXiv  
<https://doi.org/10.31234/osf.io/ckbyf>.
- Lau H (2022) In Consciousness We Trust: The Cognitive neuroscience of Subjective experience. New York. Oxford University Press.
- Lau H, Brown R (2019) The Emperor's New Phenomenology? The Empirical Case for Conscious Experience without First-Order Representations. In: Blockheads! Essays on Ned Block's philosophy of mind and consciousness (Pautz, A. and Stoljar, D., eds), pp 171-197 Cambridge, MA: MIT Press.
- Lau H, Michel M (2019) A Socio-Historical Take on the Meta-Problem of Consciousness. *Journal of Consciousness Studies* 26:136-147.
- Lau H, Michel M, LeDoux JE, Fleming SM (2022) The Mnemonic Basis of Subjective Experience. *Nature Rev Psychology* 1, 479–488 (2022). <https://doi.org/10.1038/s44159-022-00068-6>
- Lau H, Rosenthal D (2011) Empirical support for higher-order theories of conscious awareness. *Trends Cogn Sci* 15:365-373.
- Lau HC, Passingham RE (2006) Relative blindsight in normal observers and the neural correlate of visual consciousness. *Proc Natl Acad Sci U S A* 103:18763-18768. PMC1693736.
- Lau HC, Rogers RD, Passingham RE (2006) On measuring the perceived onsets of spontaneous actions. *J Neurosci* 26:7265-7271. PMC6673952.
- Laureys S (2005) The neural correlate of (un)awareness: lessons from the vegetative state. *Trends Cogn Sci* 9:556-559.
- Laureys S, Gosseries O, Tononi G (eds.) (2015) The Neurology of Consciousness: Cognitive neuroscience and neuropathology. Boston: Elsevier.
- Leal M, Powell BJ (2012) Behavioural flexibility and problem-solving in a tropical lizard. *Biol Lett* 8:28-30. PMC3259950.
- LeCun Y, Bengio Y, Hinton G (2015) Deep learning. *Nature* 521:436-444.
- LeDoux JE (1982) Neuroevolutionary mechanisms of cerebral asymmetry in man. *Brain Behavior Evolution* 20:196-212.
- LeDoux JE (1987) Emotion. In: *Handbook of Physiology 1: The Nervous System Vol V, Higher Functions of the Brain* (Plum, F., ed), pp 419-459 Bethesda: American Physiological Society.
- LeDoux JE (1990) Information flow from sensation to emotion: Plasticity in the neural computation of stimulus value. In: *Learning and Computational Neuroscience: Foundations of Adaptive Networks*, vol. 1 (Gabriel, M. and Moore, J., eds), pp 3-52 Cambridge: MIT Press.
- LeDoux JE (1991) Emotion and the limbic system concept. *Concepts in Neuroscience* 2:169-199.
- LeDoux JE (1994) Cognitive-emotional interactions in the brain; Emotion-specific physiological activity: Don't forget about CNS physiology; The degree of emotional control depends on the kind of neural system involved; Memory vs. emotional memory in the brain; Emotional experience is an output of not a cause of emotion processing. In: *Nature of Emotion: Fundamental Questions* (Ekman, P. and Davidson, R. J., eds) New York: Oxford University Press.
- LeDoux JE (1995) Emotion: clues from the brain. *Annu Rev Psychol* 46:209-235.
- LeDoux JE (1996) The Emotional Brain. New York: Simon and Schuster.
- LeDoux JE (2000) Emotion circuits in the brain. *Annu Rev Neurosci* 23:155-184.
- LeDoux JE (2002) Synaptic Self: How our brains become who we are. New York: Viking.
- LeDoux JE (2008) Emotional colouration of consciousness: how feelings come about. In: *Frontiers of Consciousness: Chichele Lectures* (Weiskrantz, L. and Davies, M., eds), pp 69-130 Oxford: Oxford University Press.
- LeDoux J (2012) Rethinking the emotional brain. *Neuron* 73:653-676.
- LeDoux JE (2014) Coming to terms with fear. *Proc Natl Acad Sci U S A* 111:2871-2878.
- LeDoux JE (2015) Anxious: Using the brain to understand and treat fear and anxiety. New York: Viking.
- LeDoux JE (2017) Semantics, Surplus Meaning, and the Science of Fear. *Trends Cogn Sci* 21:303-306.
- LeDoux J (2019) The Deep History of Ourselves: The four-billion-year story of how we got conscious brains. New York: Viking.
- LeDoux JE (2020a) How does the non-conscious become conscious? *Curr Biol* 30: R196-R199.
- LeDoux JE (2020b) Thoughtful feelings. *Curr Biol* 30: R619-R623.
- LeDoux JE (2021) What emotions might be like in other animals. *Current Biology* 31: R824-R829.
- LeDoux JE (2022) As soon as there was life, there was danger: the deep history of survival behaviours and the shallower history of consciousness. *Philos Trans R Soc Lond B Biol Sci* 377:20210292. PMC8710881.

- LeDoux JE, Brown R (2017) A higher-order theory of emotional consciousness. *Proc Natl Acad Sci U S A* 114: E2016-E2025.
- LeDoux J, Brown R, Pine DS, Hofmann SG (2018) Know Thyself: Well-Being and Subjective Experience. In: *Cerebrum* New York: The Dana Foundation.
- LeDoux J, Daw ND (2018) Surviving threats: neural circuit and computational implications of a new taxonomy of defensive behaviour. *Nat Rev Neurosci* 19:269-282.
- LeDoux JE, Hofmann SG (2018) The subjective experience of emotion: a fearful view. *Current Opinion in Behavioral Sciences* 19:67-72.
- LeDoux JE, Lau H (2020) Seeing consciousness through the lens of memory. *Curr Biol* 30:R1018-R1022.
- LeDoux JE, Wilson DH, Gazzaniga MS (1978) A divided mind: observations on the conscious properties of the separated hemispheres. *Ann Neurol.* 2:417-21.
- LeDoux JE, Michel M, Lau H (2020) A little history goes a long way toward understanding why we study consciousness the way we do today. *Proc Natl Acad Sci U S A* 117:6976-6984. PMC7132279.
- LeDoux JE, Pine DS (2016) Using Neuroscience to Help Understand Fear and Anxiety: A Two-System Framework. *Am J Psychiatry* 173:1083-1093.
- Lee WL (2007) Aristotle's Ecological Conception of Living Things and its Significance for Feminist Theory. *Diametros* 14:68-84.
- Lehrman DS (1953) A critique of Konrad Lorenz's theory of instinctive behavior. *Q Rev Biol* 28:337-363.
- Lenormand D, Piolino P (2022) In search of a naturalistic neuroimaging approach: Exploration of general feasibility through the case of VR-fMRI and application in the domain of episodic memory. *Neuroscience and Biobehavioral Reviews* 133:104499.
- Levinson M, Podvalny E, Baete SH, He BJ (2021) Cortical and subcortical signatures of conscious object recognition. *Nat Commun* 12:2930. PMC8131711.
- Lewis M (2014) The rise of consciousness and the development of emotional life. New York: The Guilford Press.
- Lewontin RC (1970) The Units of Selection. *Annual Review of Ecology and Systematics* 1:1-18.
- Lewontin RC (1983) The Organism as the Subject and Object of Evolution. *Scientia* 118:65-82.
- Libet B, Gleason CA, Wright EW, Pearl DK (1983) Time of conscious intention to act in relation to onset of cerebral activity (readiness-potential). The unconscious initiation of a freely voluntary act. *Brain* 106 (Pt 3):623-642.
- Lin B, Arai AC, Lynch G, Gall CM (2003) Integrins regulate NMDA receptor-mediated synaptic currents. *J Neurophysiol* 89:2874-2878.
- Lindquist KA, Barrett LF (2008) Constructing emotion: the experience of fear as a conceptual act. *Psychol Sci* 19:898-903. PMC2758776.
- Lindquist KA, MacCormack JK, Shablock H (2015) The role of language in emotion: predictions from psychological constructionism. *Front Psychol* 6:444. PMC4396134.
- Lindquist KA, Siegel EH, Quigley KS, Barrett LF (2013) The hundred-year emotion war: are emotions natural kinds or psychological constructions? Comment on Lench, Flores, and Bench (2011). *Psychol Bull* 139:255-263. PMC3556454.
- Llinas R, Sotelo C (eds.) (1992) *The Cerebellum Revisited*. New York: Springer-Verlag.
- Llinas RR (2011) Cerebellar motor learning versus cerebellar motor timing: the climbing fibre story. *J Physiol* 589:3423-3432. PMC3167107.
- Locke J (1990) Questions concerning the law of nature. Ithaca: Cornell University Press.
- Lockwood PL, Klein-Flugge MC, Abdurahman A, Crockett MJ (2020) Model-free decision making is prioritized when learning to avoid harming others. *Proc Natl Acad Sci U S A* 117:27719-27730. PMC7959560.
- Loftus EF (1991) Resolving legal questions with psychological data. *American Journal of Psychology* 46:1046-1048.
- Lorenz K (1965) Evolution and modification of behavior. Chicago: University of Chicago Press.
- Lotka AJ (1925) *Elements of Physical Biology*. Baltimore: Williams and Wilkins.
- Lundqvist M, Rose J, Warden MR, Buschman T, Miller EK, Herman P (2021) A Hot-Coal theory of Working Memory. *bioRxiv* 2020.2012.2030.424833.
- Lyon P (2015) The cognitive cell: bacterial behavior reconsidered. *Front Microbiol* 6:264. PMC4396460.
- Lysaker PH, Lysaker JT (2002) Narrative structure in psychosis: Schizophrenia and disruptions in the dialogical self. *Theory & Psychology* 12:207-220.
- MacIntyre A (1984) *After Virtue: A study in moral theory*. Notre Dame, IN: University of Notre Dame Press.
- Mackintosh NJ (1963) Extinction of a Discrimination Habit as a Function of Overtraining. *J Comp Physiol Psychol* 56:842-847.

- MacLean EL (2016) Unraveling the evolution of uniquely human cognition. *Proc Natl Acad Sci U S A* 113:6348-6354. PMC4988573.
- MacLean PD (1949) Psychosomatic disease and the "visceral brain": recent developments bearing on the Papez theory of emotion. *Psychosomatic Medicine* 11:338-353.
- MacLean PD (1952) Some psychiatric implications of physiological studies on frontotemporal portion of limbic system (visceral brain). *Electroencephalography and Clinical Neurophysiology* 4:407-418.
- MacLean PD (1964) Man and His Animal Brains. *Modern Medicine* 32:95-106.
- MacLean PD (1970) The triune brain, emotion and scientific bias. In: *The Neurosciences: Second Study Program* (Schmitt, F. O., ed), pp 336-349 New York: Rockefeller University Press.
- MacLean PD (1990) The triune brain in evolution: Role in paleocerebral functions. New York: Plenum Press.
- Makino H, Hwang EJ, Hedrick NG, Komiyama T (2016) Circuit Mechanisms of Sensorimotor Learning. *Neuron* 92:705-721. PMC5131723.
- Malach R (2021) Local neuronal relational structures underlying the contents of human conscious experience. *Neurosci Conscious* 2021:niab028. PMC8415036.
- Mandler G (1975) Consciousness: Respectable, useful, and probably necessary. In: *Information processing and cognition: The Loyola Symposium* (Solso, R. L., ed) Hilldale, NJ: Erlbaum.
- Mandler G (2002) Origins of the cognitive (r)evolution. *J Hist Behav Sci* 38:339-353.
- Mandler G, Kessen W (1959) *The Language of Psychology*. New York: John Wiley & Sons, Inc.
- Mangan B (1993) Taking phenomenology seriously: The "fringe" and its implications for cognitive research. *Consciousness and Cognition: An International Journal* 2:89-108.
- Mangan B (1999) The Fringe: A case study in explanatory phenomenology. *Journal of Consciousness Studies* 6:249-252.
- Mangan B (2003) The conscious "fringe": Bringing William James up to date. In: *Essential sources in the scientific study of consciousness* (Baars, B. J. et al., eds), pp 741-759 Cambridge: MIT Press.
- Maniscalco B, Lau H (2012) A signal detection theoretic approach for estimating metacognitive sensitivity from confidence ratings. *Conscious Cogn* 21:422-430.
- Mannella F, Mirolli M, Baldassarre G (2016) Goal-Directed Behavior and Instrumental Devaluation: A Neural System-Level Computational Model. *Front Behav Neurosci* 10:181. PMC5067467.
- Mansouri FA, Koechlin E, Rosa MGP, Buckley MJ (2017) Managing competing goals - a key role for the frontopolar cortex. *Nat Rev Neurosci* 18:645-657.
- Manto M, Bower JM, Conforto AB, Delgado-Garcia JM, da Guarda SN, Gerwig M, Habas C, Hagura N, Ivry RB, Marien P, Molinari M, Naito E, Nowak DA, Oulad Ben Taib N, Pelisson D, Tesche CD, Tilikete C, Timmann D (2012) Consensus paper: roles of the cerebellum in motor control--the diversity of ideas on cerebellar involvement in movement. *Cerebellum* 11:457-487. PMC4347949.
- Manyika JM (ed.) (2022) *AI & Society*. Cambridge, MA: American Academy of Arts & Sciences.
- Margolis J (2017) Three paradoxes of personhood: The Venetian Lectures. Szczecin: Mimesis International.
- Marks I (1987) *Fears, Phobias, and Rituals: Panic, Anxiety and Their Disorders*. New York: Oxford University Press.
- Markus HR, Kitayama S (1991) Culture and the self: Implications for cognition, emotion, and motivation. *Psychol Rev* 98:224-253.
- Martin KC, Kandel ER (1996) Cell adhesion molecules, CREB, and the formation of new synaptic connections. *Neuron* 17:567-570.
- Martínez-García F, Lanuza E (2018) Evolution of vertebrate survival circuits. *Current Opinion in Behavioral Sciences* 24:113-123.
- Martínez-García F, Martínez-Marcos A, Lanuza E (2002) The pallial amygdala of amniote vertebrates: evolution of the concept, evolution of the structure. *Brain Res Bull* 57:463-469.
- Marty C (2009) Darwin on a Godless Creation: "It's like confessing to a murder". *Scientific American* <https://www.scientificamerican.com/article/charles-darwin-confessions/>.
- Marx MH (1951) Intervening variable or hypothetical construct? *Psychol Rev* 58:235-247.
- Matloff G (2016) Can Panpsychism Become an Observational Science? *Journal of Consciousness Exploration and Research* 7:524-543.
- Maturana HR, Varela FJ (1987) The tree of knowledge: The biological roots of human understanding. Boston: New Science Library.
- Maynard Smith J, Szathmary E (1995) *The major transitions in evolution*. Oxford: Oxford University Press.

- Mazor M, Friston KJ, Fleming SM (2020) Distinct neural contributions to metacognition for detecting, but not discriminating visual stimuli. *Elife* 9. PMC7170652.
- McConwell AK (2017) Individuality, the Major Transitions, and the Evolutionary Contingency Thesis (unpublished doctoral thesis). vol. PhD: University of Calagary.
- McEwen B (1994) The Hostage Brain. New York: Rockefeller U. Press.
- McEwen BS (2017) Allostasis and the Epigenetics of Brain and Body Health Over the Life Course: The Brain on Stress. *JAMA Psychiatry* 74:551-552.
- McIlvenny P (2002) Talking Gender and Sexuality. Amsterdam. John Benjamins.
- McIntosh D (1986) The ego and the self in the thought of Sigmund Freud. *Int J Psychoanal* 67 ( Pt 4):429-448.
- McKenzie S, Robinson NT, Herrera L, Churchill JC, Eichenbaum H (2013) Learning causes reorganization of neuronal firing patterns to represent related experiences within a hippocampal schema. *J Neurosci* 33:10243-10256. PMC3685831.
- McNamee D, Wolpert DM (2019) Internal Models in Biological Control. *Annu Rev Control Robot Auton Syst* 2:339-364. PMC6520231.
- Mead GH (1934) Mind, self, and society. Chicago: University of Chicago Press.
- Mehta MR (2015) From synaptic plasticity to spatial maps and sequence learning. *Hippocampus* 25:756-762.
- Mei J, Muller E, Ramaswamy S (2022) Informing deep neural networks by multiscale principles of neuromodulatory systems. *Trends Neurosci* 45:237-250.
- Melloni L (2015) Consciousness as Interference in Time: A commentary on Victor Lamme. In: Open MIND (Metzinger, T. and Windt, J. M., eds), pp 881-893 Cambridge, MA: The MIT Press.
- Merker B (2007) Consciousness without a cerebral cortex: a challenge for neuroscience and medicine. *Behav Brain Sci* 30:63-81; discussion 81-134.
- Merleau-Ponty M (1964) Sense and Non-Sense: Studies in Phenomenology and Existential Philosophy. Evanston: Northwestern University Press.
- Merzenich MM, Jenkins WM (1995) Cortical plasticity, learning, and learning dysfunction. In: Maturational Windows and Adult Cortical Plasticity (Julesz, B. and Kovacs, I., eds), pp 247-272 Reading, MA: Addison-Wesley.
- Mesquita B, Boiger M, De Leersnyder J (2016) The cultural construction of emotions. *Curr Opin Psychol* 8:31-36.
- Mesquita B (2022) Between Us: How Cultures Create Emotions. New York: WW Norton.
- Mesulam MM (1998) From sensation to cognition. *Brain* 121 ( Pt 6):1013-1052.
- Metcalfe J, Shimamura AP (1994) Metacognition: knowing about knowing. Cambridge, MA: Bradford Books.
- Metcalfe J, Son LK (2012) Anoetic, noetic and autonoetic metacognition. In: The Foundations of Metacognition (Beran, M. et al., eds) Oxford: Oxford University Press.
- Metzinger T (2003) Being no one. Cambridge: MIT Press.
- Metzinger T (2014) First-order embodiment, second-order embodiment, third-order embodiment: From spatiotemporal self-location to minimal selfhood. In: The Routledge Handbook of Embodied Cognition (Shapiro, R., ed), pp 272-286 New York: Routledge.
- Meunier D, Lambiotte R, Fornito A, Ersche KD, Bullmore ET (2009) Hierarchical modularity in human brain functional networks. *Front Neuroinform* 3:37. PMC2784301.
- Michel M (2020) Consciousness Science Underdetermined: A short history of endless debates. *Ergo* 6.
- Michel M, Beck D, Block N, Blumenfeld H, Brown R, Carmel D, Carrasco M, Chirimutta M, Chun M, Cleeremans A, Dehaene S, Fleming SM, Frith C, Haggard P, He BJ, Heyes C, Goodale MA, Irvine L, Kawato M, Kentridge R, King JR, Knight RT, Kouider S, Lamme V, Lamy D, Lau H, Laureys S, LeDoux J, Lin YT, Liu K, Macknik SL, Martinez-Conde S, Mashour GA, Melloni L, Miracchi L, Mylopoulos M, Naccache L, Owen AM, Passingham RE, Pessoa L, Peters MAK, Rahnev D, Ro T, Rosenthal D, Sasaki Y, Sergent C, Solovey G, Schiff ND, Seth A, Tallon-Baudry C, Tamietto M, Tong F, van Gaal S, Vlassova A, Watanabe T, Weisberg J, Yan K, Yoshida M (2019) Opportunities and challenges for a maturing science of consciousness. *Nat Hum Behav* 3:104-107. PMC6568255.
- Michel M, Doering A (submitted) A new empirical challenge for local theories of consciousness. *Mind & Language* n/a.
- Michel M, Lau H (2020) On the dangers of conflating strong and weak versions of a theory of consciousness. *Philosophy and the Mind Sciences* 1.
- Michel M, Morales J (2020) Minority Reports: Consciousness and the Prefrontal Cortex. *Mind and Language* 35:493-513.
- Michod RE (2005) On the transfer of fitness from the cell to the multicellular organism. *Biology & Philosophy* 20:967-987.

- Michod RE, Roze D (2001) Cooperation and conflict in the evolution of multicellularity. *Heredity (Edinb)* 86:1-7.
- Miller EK, Cohen JD (2001) An integrative theory of prefrontal cortex function. *Annu Rev Neurosci* 24:167-202.
- Miller EK, Lundqvist M, Bastos AM (2018) Working Memory 2.0. *Neuron* 100:463-475. PMC8112390.
- Miller G (1956) The magical number seven, plus or minus two: Some limits on our capacity for processing information. *Psychological review* 63:81-97.
- Miller G (2010) Is pharma running out of brainy ideas? *Science* 329:502-504.
- Miller GA (1962) Psychology: The science of mental life. Oxford: Harper & Row.
- Miller GA, Glanter EG, Pribram KH (1960) Plans and the structure of behavior. New York: Holt, Rinehart and Winston.
- Miller NE, DiCara LV, Solomon H, Weiss JM, Dworkin B (1970) Psychological aspects of hypertension. Learned modifications of autonomic functions: a review and some new data. *Circ Res* 27:3-11.
- Millière R, Newen A (2022) Selfless Memories. *Erkenntnis*.
- Millon T (2016) What Is a Personality Disorder? *J Pers Disord* 30:289-306.
- Milner B (1954) Intellectual function of the temporal lobes. *Psychol Bull* 51:42-62.
- Milner B, Corkin S, Teuber HL (1968) Further analysis of the hippocampal amnesia syndrome: 14-year follow-up study of H. M. *Neuropsychologia* 6:215-234.
- Milner D, Goodale M (2006) The Visual Brain in Action. Oxford: Oxford University Press.
- Min J, Nashiro K, Yoo HJ, Cho C, Nasseri P, Bachman SL, Porat S, Thayer JF, Chang C, Lee TH, Mather M (2022) Emotion Downregulation Targets Interoceptive Brain Regions While Emotion Upregulation Targets Other Affective Brain Regions. *J Neurosci* 42:2973-2985. PMC8985868.
- Minsky M (1961) Steps toward Artificial Intelligence. *Proceedings of the IRE* 49:8-30.
- Mischel W (1968) Personality and Assessment. Mahwah, NJ: Lawrence Erlbaum Associates.
- Mischel W (1969) Continuity and change in personality. *Am Psychol* 24:1012-1018.
- Mischel W, Shoda Y (1995) A cognitive-affective system theory of personality: reconceptualizing situations, dispositions, dynamics, and invariance in personality structure. *Psychol Rev* 102:246-268.
- Mishkin M (1957) Effects of small frontal lesions on delayed alternation in monkeys. *J Neurophysiol* 20:615-622.
- Mishkin M, Pribram KH (1955) Analysis of the effects of frontal lesions in monkey. I. Variations of delayed alternation. *J Comp Physiol Psychol* 48:492-495.
- Mitchell KJ (2018) Does Neuroscience Leave Room for Free Will? *Trends Neurosci* 41:573-576.
- Mitchell T (1997) Machine Learning. New York: McGraw Hill.
- Miyamoto K, Trudel N, Kamermans K, Lim MC, Lazari A, Verhagen L, Wittmann MK, Rushworth MFS (2021) Identification and disruption of a neural mechanism for accumulating prospective metacognitive information prior to decision-making. *Neuron* 109:1396-1408 e1397. PMC8063717.
- Mizunami M (2021) What Is Learned in Pavlovian Conditioning in Crickets? Revisiting the S-S and S-R Learning Theories. *Front Behav Neurosci* 15:661225. PMC8225941.
- Mobbs D, LeDoux JE (eds.) (2018) Survival Circuits. New York: Elsevier.
- Moore BR (2004) The evolution of learning. *Biol Rev Camb Philos Soc* 79:301-335.
- Morales J (2023) Tracing the origins of consciousness. *Philosophical Psychology* 1-5.
- Morales J, Lau H, Fleming SM (2018) Domain-General and Domain-Specific Patterns of Activity Supporting Metacognition in Human Prefrontal Cortex. *J Neurosci* 38:3534-3546. PMC5895040.
- Morales J, Odegaard B, Maniscalco B (2019) The Neural Substrates of Conscious Perception without Performance Confounds. *PsyArXiv*.
- Morin A (2009) Inner speech and consciousness. In: Encyclopedia of Consciousness (Banks, W., ed), pp 389-402 Oxford: Elsevier.
- Morris RGM, Garrard P, Rawlins JNP, O'Keefe J (1982) Place navigation impaired in rats with hippocampal lesions. *Nature* 273:297-298.
- Moruzzi G, Magoun HW (1949) Brain Stem Reticular Formation and Activation of the EEG. *Electroencephalography and Clinical Neurophysiology* 1:455-473.
- Moscovitch M (1992) Memory and working-with-memory: a component process model based on modules and central systems. *Journal of Cognitive Neuroscience* 4:257-267.
- Moscovitch M, Nadel L, Winocur G, Gilboa A, Rosenbaum RS (2006) The cognitive neuroscience of remote episodic, semantic and spatial memory. *Current opinion in neurobiology* 16:179-190.
- Moser EI, Moser MB, McNaughton BL (2017) Spatial representation in the hippocampal formation: a history. *Nature neuroscience* 20:1448-1464.

- Moser MB, Rowland DC, Moser EI (2015) Place cells, grid cells, and memory. *Cold Spring Harb Perspect Biol* 7: a021808. PMC4315928.
- Mowrer OH (1960) Learning theory and behavior. New York: Wiley.
- Muller RU, Kubie JL (1987) The effects of changes in the environment on the spatial firing of hippocampal complex-spike cells. *J Neurosci* 7:1951-1968. PMC6568940.
- Murray EA, Wise SP, Graham KS (2017) The Evolution of Memory Systems: Ancestors, anatomy, and adaptations. Oxford: Oxford University Press.
- Murray EA, Wise SP, Graham KS (2018) Representational specializations of the hippocampus in phylogenetic perspective. *Neurosci Lett* 680:4-12. PMC5665731.
- Murray HA (1938) Explorations in Personality: A clinical and experimental study of fifty men of college age. Oxford: Oxford University Press.
- Muzio RN, Pistone Creydt V, Iurman M, Rinaldi MA, Sirani B, Papini MR (2011) Incentive or habit learning in amphibians? *PLoS One* 6:e25798. PMC3210735.
- Naccache L (2018) Why and how access consciousness can account for phenomenal consciousness. *Philos Trans R Soc Lond B Biol Sci* 373. PMC6074081.
- Naccache L, Dehaene S (2007) Reportability and illusions of phenomenality in the light of the global neuronal workspace model. *Behav Brain Sci* 30:518-520.
- Nadel L, Peterson MA (2013) The hippocampus: part of an interactive posterior representational system spanning perceptual and memorial systems. *J Exp Psychol Gen* 142:1242-1254.
- Nader K (2015) Reconsolidation and the Dynamic Nature of Memory. *Cold Spring Harb Perspect Biol* 7:a021782. PMC4588064.
- Nagel IE, Preuschhof C, Li SC, Nyberg L, Backman L, Lindenberger U, Heekeren HR (2011) Load modulation of BOLD response and connectivity predicts working memory performance in younger and older adults. *J Cogn Neurosci* 23:2030-2045.
- Nagel T (1974) What is it like to be a bat? *Philosophical Review* 83:4435-4450.
- Nahmias EA (2002) Verbal reports on the contents of consciousness: Reconsidering introspectionist methodology. *Psyche* 8.
- Nakanishi N, Yuan D, Hartenstein V, Jacobs DK (2010) Evolutionary origin of rhopalia: insights from cellular-level analyses of Otx and POU expression patterns in the developing rhoparial nervous system. *Evol Dev* 12:404-415.
- Nauta WJH, Karten HJ (1970) A general profile of the vertebrate brain, with sidelights on the ancestry of cerebral cortex. In: The Neurosciences: Second Study Program (Schmitt, F. O., ed), pp 7-26 New York: The Rockefeller University Press.
- Neisser U (1967) Cognitive Psychology. Englewood Cliffs, NJ: Prentice Hall.
- Neisser U (1988) Five kinds of self knowledge. *Philosophical Psychology* 1:35-39.
- Neisser U (1991) Two perceptually given aspects of the self and their development. *Developmental Review* 11:197-209.
- Nelson TO, Narens L (1990) Metamemory: A Theoretical Framework and New Findings. In: *Psychology of Learning and Motivation*, vol. 26 (Bower, G. H., ed), pp 125-173: Academic Press.
- Neubert FX, Mars RB, Thomas AG, Sallet J, Rushworth MF (2014) Comparison of human ventral frontal cortex areas for cognitive control and language with areas in monkey frontal cortex. *Neuron* 81:700-713.
- Nevin JA (1973) The Study of Behavior: Learning, motivation, emotion, and instinct. Oxford: Scott, Foresman.
- Newell A, Simon H (1972) Human Problem Solving. Boston: Little, Brown and Company.
- Newen A (2018) The Embodied Self, the Pattern Theory of Self, and the Predictive Mind. *Front Psychol* 9:2270. PMC6265368.
- Nieder A. (2022). In search for consciousness in animals: Using working memory and voluntary attention as behavioral indicators. *Neuroscience and biobehavioral reviews*, 142, 104865. <https://doi.org/10.1016/j.neubiorev.2022.104865>
- Niklas KJ (2014) The evolutionary-developmental origins of multicellularity. *Am J Bot* 101:6-25.
- Niklas KJ, Newman SA (eds.) (2016) Multicellularity: origins and evolution. Cambridge, MA: MIT Press.
- Nisbett RE, Wilson TD (1977) Telling more than we can know: Verbal reports on mental processes. *Psychological review* 84:231-259.
- Noe A (2004) Action in Perception. Cambridge, MA: MIT Press.
- Nomaksteinsky M, Kassabov S, Chettouh Z, Stoekle HC, Bonnaud L, Fortin G, Kandel ER, Brunet JF (2013) Ancient origin of somatic and visceral neurons. *BMC Biol* 11:53. PMC3660236.

- Nomaksteinsky M, Rottinger E, Dufour HD, Chettouh Z, Lowe CJ, Martindale MQ, Brunet JF (2009) Centralization of the deuterostome nervous system predates chordates. *Curr Biol* 19:1264-1269.
- Norman DA, Shallice T (1986) Attention to action: Willed and automatic control of behavior. In: *Consciousness and self-regulation* (Davidson, R. J. et al., eds), pp 1-18 New York: Plenum.
- Northcutt RG (2012) Evolution of centralized nervous systems: two schools of evolutionary thought. *Proc Natl Acad Sci U S A* 109 Suppl 1:10626-10633. PMC3386872.
- Northcutt RG, Kaas JH (1995) The emergence and evolution of mammalian neocortex. *Trends in Neurosciences* 18:373-379.
- Northoff G, Bermpohl F (2004) Cortical midline structures and the self. *Trends Cogn Sci* 8:102-107.
- Northoff G, Qin P, Feinberg TE (2011) Brain imaging of the self--conceptual, anatomical and methodological issues. *Conscious Cogn* 20:52-63.
- Novikoff AB (1945) The Concept of Integrative Levels and Biology. *Science* 101:209-215.
- Nowak A, Vallacher RR, Tesser A, Borkowski W (2000) Society of self: the emergence of collective properties in self-structure. *Psychol Rev* 107:39-61.
- Nozdrachev AD (2002) [John Newport Langley and his autonomic (vegetative) nervous system structure (to the 150th anniversary of birth)]. *Zh Evol Biokhim Fiziol* 38:422-429.
- Nussbaum MC (2018) What does it mean to be human: Don't Ask. *New York Times. Opinion: Big Ideas*. Aug 20, 2018.
- Oberauer K (2019) Working Memory and Attention - A Conceptual Analysis and Review. *J Cogn* 2:36. PMC6688548.
- O'Connor T (2020) Emergent Properties. In: *The Stanford Encyclopedia of Philosophy* (Zalta, E. N., ed) <https://plato.stanford.edu/archives/fall2020/entries/properties-emergent/>: Metaphysics Research Lab, Stanford University.
- Odegaard B, Chang MY, Lau H, Cheung SH (2018) Inflation versus filling-in: why we feel we see more than we actually do in peripheral vision. *Philos Trans R Soc Lond B Biol Sci* 373. PMC6074087.
- Odegaard B, Knight RT, Lau H (2017) Should a Few Null Findings Falsify Prefrontal Theories of Conscious Perception? *J Neurosci* 37:9593-9602. PMC5628405.
- O'Doherty J, Krriegelbach ML, Rolls ET, Hornak J, Andrews C (2001) Abstract reward and punishment representations in the human orbitofrontal cortex. *Nature neuroscience* 4:95-102.
- O'Doherty JP, Cockburn J, Pauli WM (2017) Learning, Reward, and Decision Making. *Annu Rev Psychol* 68:73-100. PMC6192677.
- O'Doherty JP, Hampton A, Kim H (2007) Model-based fMRI and its application to reward learning and decision making. *Ann N Y Acad Sci* 1104:35-53.
- Oesch LT, Adamantidis AR (2021) Sleep and Metabolism: Implication of Lateral Hypothalamic Neurons. *Front Neurol Neurosci* 45:75-90.
- Ohman A (2002) Automaticity and the amygdala: nonconscious responses to emotional faces. *Curr Dir Psychol Sci* 11:62-66.
- Ohman A, Mineka S (2001) Fears, phobias, and preparedness: toward an evolved module of fear and fear learning. *Psychol Rev* 108:483-522.
- O'Keefe J (1985) Is consciousness the gateway to the hippocampal cognitive map? A speculative essay on the neural basis of mind. In: *Brain & Mind* (Oakley, D. A., ed) New York: Methuen & Co.
- O'Keefe J, Dostrovsky J (1971) The hippocampus as a spatial map. Preliminary evidence from unit activity in the freely-moving rat. *Brain Res* 34:171-175.
- O'Keefe J, Nadel L (1978) The Hippocampus as a Cognitive Map. Oxford: Clarendon Press.
- Okuda J, Fujii T, Ohtake H, Tsukiura T, Tanji K, Suzuki K, Kawashima R, Fukuda H, Itoh M, Yamadori A (2003) Thinking of the future and past: the roles of the frontal pole and the medial temporal lobes. *Neuroimage* 19:1369-1380.
- Olds J (1956) Pleasure centers in the brain. *Sci Am* 195:105-116.
- Olson ET (1999) There Is No Problem of the Self. In: *Models of The Self* (Gallagher, S. and Shear, J., eds), pp 49-62 Exeter: Imprint Academic.
- Oppenheimer DM (2008) The secret life of fluency. *Trends Cogn Sci* 12:237-241.
- Ortony A, Clore GL, Collins A (1988) The cognitive structure of emotions. Cambridge University Press: Cambridge.
- Örülv L, Hydén L-C (2006) Confabulation: sense-making, self-making and world-making in dementia. *Discourse Studies* 8:647-673.
- Otto AR, Raio CM, Chiang A, Phelps EA, Daw ND (2013) Working-memory capacity protects model-based learning from stress. *Proc Natl Acad Sci U S A* 110:20941-20946. PMC3876216.

- Pace-Schott EF (2013) Dreaming as a story-telling instinct. *Front Psychol* 4:159. PMC3613603.
- Packard MG, McGaugh JL (1996) Inactivation of hippocampus or caudate nucleus with lidocaine differentially affects expression of place and response learning. *Neurobiol Learn Mem* 65:65-72.
- Pan Y, Lin B, Zhao Y, Soto D (2014) Working memory biasing of visual perception without awareness. *Atten Percept Psychophys* 76:2051-2062.
- Panagiotaropoulos TI, Wang L, Dehaene S (2020) Hierarchical architecture of conscious processing and subjective experience. *Cogn Neuropsychol* 37:180-183.
- Panksepp J (1998) Affective Neuroscience. New York: Oxford U. Press.
- Panksepp J, Biven L (2012) The Archaeology of Mind: Neuroevolutionary origins of human emotions. New York: W. W. Norton & Co.
- Papineau D (2022) Philosophical Reviews, <https://ndpr.nd.edu/reviews/vagueness-and-the-evolution-of-consciousness-through-the-looking-glass/>. vol. 2022: University of Notre Dame.
- Papini MR (2006) Role of Surprising Nonreward in Associative Learning. *Japanese Journal of Animal Psychology* 56:35-54.
- Papini MR (2008) Comparative Psychology: Evolution and development of behavior. New York: Psychology Press.
- Papini MR (2014) Diversity of Adjustments to Reward Downshifts in Vertebrates. *International Journal of Comparative Psychology* 27:420-445.
- Parfrey LW, Lahr DJ, Knoll AH, Katz LA (2011) Estimating the timing of early eukaryotic diversification with multigene molecular clocks. *Proc Natl Acad Sci U S A* 108:13624-13629. PMC3158185.
- Passingham D, Sakai K (2004) The prefrontal cortex and working memory: physiology and brain imaging. *Current opinion in neurobiology* 14:163-168.
- Passingham RE (2021) Understanding the Prefrontal Cortex: Selective advantage, connectivity, and neural operations. Oxford: Oxford University Press.
- Passingham RE, Smaers JB, Sherwood CC (2017) Evolutionary specializations of the human prefrontal cortex. In: *Evolution of Nervous Systems*, vol. 4 (Kaas, J. H. and Preuss, T. M., eds), pp 207-226: Elsevier Press.
- Patton P (2015) Ludwig Edinger: the vertebrate series and comparative neuroanatomy. *J Hist Neurosci* 24:26-57.
- Penn DC, Holyoak KJ, Povinelli DJ (2008) Darwin's mistake: explaining the discontinuity between human and nonhuman minds. *Behav Brain Sci* 31:109-130; discussion 130-178.
- Penn E, Tracy DK (2012) The drugs don't work? antidepressants and the current and future pharmacological management of depression. *Ther Adv Psychopharmacol* 2:179-188. PMC3736946.
- Pennisi E (2018) Is cancer a breakdown of multicellularity? *Science* 360:1391.
- Penrose R (1989) The emperor's new mind: Concerning computers, minds, and the laws of physics. New York: Penguin Books.
- Pepperberg I (2009) Alex & Me: How a Scientist and a Parrot Discovered a Hidden World of Animal Intelligence--and Formed a Deep Bond in the Process. New York: Harper.
- Pereira M, Perrin D, Faivre N (2022) A leaky evidence accumulation process for perceptual experience. *Trends in cognitive sciences*.
- Perry CJ, Barron AB, Cheng K (2013) Invertebrate learning and cognition: relating phenomena to neural substrate. *Wiley Interdiscip Rev Cogn Sci* 4:561-582.
- Pessoa L, Medina L, Desfilis E (2022) Refocusing neuroscience: moving away from mental categories and towards complex behaviours. *Philos Trans R Soc Lond B Biol Sci* 377:20200534. PMC8710886.
- Peterson BS (2015) Editorial: Research Domain Criteria (RDoC): a new psychiatric nosology whose time has not yet come. *J Child Psychol Psychiatry* 56:719-722.
- Petrides M (2000) Dissociable roles of mid-dorsolateral prefrontal and anterior inferotemporal cortex in visual working memory. *J Neurosci* 20:7496-7503. PMC6772785.
- Pfaff D (2019) How Brain Arousal Mechanisms Work: Paths toward consciousness. New York: Cambridge University Press.
- Pfaff DW (1999) Drive: neurobiological and molecular mechanisms of sexual motivation. Cambridge, MA: MIT Press.
- Pfeiffer BE, Foster DJ (2013) Hippocampal place-cell sequences depict future paths to remembered goals. *Nature* 497:74-79. PMC3990408.
- Phelps EA, LeDoux JE (2005) Contributions of the amygdala to emotion processing: from animal models to human behavior. *Neuron* 48:175-187.
- Piaget J (1923) Langage et pensée chez l'enfant. Delachaux et Niestlé: Neuchâtel.

- Picard M, McEwen BS, Epel ES, Sandi C (2018) An energetic view of stress: Focus on mitochondria. *Front Neuroendocrinol* 49:72-85. PMC5964020.
- Pine DS, Wise SP, Murray EA (2021) Evolution, Emotion, and Episodic Engagement. *American Journal of Psychiatry* 178:701-714.
- Place UT (1956) Is consciousness a brain process? *Br J Psychol* 47:44-50.
- Plato (1875) *The Dialogues of Plato*. vol. 3, *Timaeus* London: Oxford University Press.
- Plomin R, DeFries JC, Knopik VS, Neiderhiser JM (2012) *Behavioral Genetics*. New York: Worth Publishers.
- Plum F, Posner JB (1966) *Diagnosis of Stupor and Coma*. Philadelphia: FA Davis.
- Poldrack RA (2021) *Hard to Break: Why our brains make habits stick*. Princeton, NJ: Princeton University Press.
- Porges SW (2001) The polyvagal theory: phylogenetic substrates of a social nervous system. *International journal of psychophysiology: official journal of the International Organization of Psychophysiology* 42:123-146.
- Posner M, Petersen S (1990) The attention system of the human brain. *Annual Review of Neuroscience* 13:25-42.
- Postle BR (2006) Working memory as an emergent property of the mind and brain. *Neuroscience* 139:23-38. PMC1428794.
- Postle BR (2016) Chapter 21 - The Hippocampus, Memory, and Consciousness. In: *The Neurology of Consciousness* (Laureys, S. et al., eds), pp 349-363 New York: Academic Press.
- Povinelli DJ, Bering JM, Giambrone S (2000) Toward a Science of Other Minds: Escaping the Argument by Analogy. *Cognitive Science* 24:509-541.
- Povinelli DJ, Prince CG (1998) When Self Met Other. In: *Self-Awareness: Its nature and development* (Ferrari, M. and Sternberg, R. J., eds), pp 37-107 New York: Guilford Press.
- Pradeu T (2010) What is an organism? An immunological answer. *Hist Philos Life Sci* 32:247-267.
- Pradeu T (2012) *The Limits of Self: Immunology and biological identity*. Oxford: Oxford University Press.
- Pradeu T (2016) Organisms or biological individuals? Combining physiological and evolutionary individuality. *Biology & Philosophy* 31:797-817.
- Pradeu T (2019) Immunology and individuality. *Elife* 8. PMC6450664.
- Premack D, Woodruff G (1978) Does the chimpanzee have a theory of mind? *Behavioral and Brain Sciences* 4:515-629.
- Pretzer J (2014) Schemas, Assumptions, and Beliefs, Oh My!, <https://behavior.net/2014/02/schemas-assumptions-and-beliefs-oh-my/>, retrieved May 13, 2022. Behavior Online.
- Preuss TM (1995) Do rats have prefrontal cortex? The Rose-Woolsey-Akert program reconsidered. *Journal of Cognitive Neuroscience* 7:1-24.
- Preuss TM (2007) Evolutionary Specializations of Primate Brain Systems. In: *PRIMATE ORIGINS: Adaptations and Evolution* (Ravosa, M. J. and Dagosto, M., eds), pp 625-675 Boston, MA: Springer US.
- Preuss TM (2011) The human brain: rewired and running hot. *Ann N Y Acad Sci* 1225 Suppl 1:E182-191. PMC3103088.
- Preuss TM, Goldman-Rakic PS (1991) Myelo- and cytoarchitecture of the granular frontal cortex and surrounding regions in the strepsirrhine primate Galago and the anthropoid primate Macaca. *J Comp Neurol* 310:429-474.
- Preuss TM, Wise SP (2022) Evolution of prefrontal cortex. *Neuropsychopharmacology* 47:3-19.
- Proust J (2013) *The Philosophy of Metacognition: Mental agency and self-awareness*. Oxford: Oxford University Press.
- Puelles L, Alonso A, Garcia-Calero E, Martinez-de-la-Torre M (2019) Concentric ring topology of mammalian cortical sectors and relevance for patterning studies. *J Comp Neurol* 527:1731-1752.
- Quilty-Dunn J, Porot N, Mandelbaum E (2022) The Best Game in Town: The Re-Emergence of the Language of Thought Hypothesis Across the Cognitive Sciences. *Behavioral and Brain Sciences* 1-55.
- Raichle ME (2015) The brain's default mode network. *Annu Rev Neurosci* 38:433-447.
- Ramnani N, Owen AM (2004) Anterior prefrontal cortex: insights into function from anatomy and neuroimaging. *Nat Rev Neurosci* 5:184-194.
- Ranson SW, Magoun HW (1933) Respiratory and Pupillary Reactions: Induced by electrical stimulation of the hypothalamus. *Archives of Neurology & Psychiatry* 29:1179-1194.
- Read DW (2008) Working Memory: A Cognitive Limit to Non-Human Primate Recursive Thinking Prior to Hominid Evolution. *Evolutionary Psychology* 6:147470490800600413.
- Reber AS (1967) Implicit learning of artificial grammars. *Journal of Verbal Learning and Verbal Behavior* 6:855-863.
- Reber AS (1989) Implicit learning and tacit knowledge. *Journal of Experimental Psychology: General* 118:219-235.
- Reber AS (2019) *The First Minds: Caterpillars, Karyotes, and Consciousness*. Oxford: Oxford University Press.
- Reber R, Wurtz P, Zimmermann TD (2004) Exploring "fringe" consciousness: the subjective experience of perceptual fluency and its objective bases. *Conscious Cogn* 13:47-60.

- Reber TP, Luechinger R, Boesiger P, Henke K (2012) Unconscious relational inference recruits the hippocampus. *J Neurosci* 32:6138-6148. PMC6622124.
- Redshaw J, Suddendorf T (2020) Temporal Junctures in the Mind. *Trends Cogn Sci* 24:52-64.
- Reiner A (1990) An Explanation of Behavior. vol. 250, pp 303-305: Science.
- Reiner A (2009) You Cannot Have a Vertebrate Brain Without a Basal Ganglia. In: The Basal Ganglia IX (Groenewegen, H. J. et al., eds), pp 3-24 New York, NY: Springer New York.
- Reiner A (2009) You Cannot Have a Vertebrate Brain Without a Basal Ganglia. pp 3-24 New York, NY: Springer New York.
- Reiner A, Medina L, Veenman CL (1998) Structural and functional evolution of the basal ganglia in vertebrates. *Brain Res Brain Res Rev* 28:235-285.
- Renoult L, Irish M, Moscovitch M, Rugg MD (2019) From Knowing to Remembering: The Semantic-Episodic Distinction. *Trends Cogn Sci* 23:1041-1057.
- Rentschler I, Juttner M, Unzicker A, Landis T (1999) Innate and learned components of human visual preference. *Curr Biol* 9:665-671.
- Rescorla M (2019) The Language of Thought Hypothesis. In: The Stanford Encyclopedia of Philosophy (Zalta, E. N., ed) <https://plato.stanford.edu/archives/sum2019/entries/language-thought>, retrieved April 11, 2022: Metaphysics Research Lab, Stanford University.
- Rescorla RA (1974) Effect of inflation of the unconditioned stimulus value following conditioning. *Journal of Comparative and Physiological Psychology* 86:101-106.
- Rescorla RA (1988) Pavlovian conditioning. It's not what you think it is. *Am Psychol* 43:151-160.
- Rhodes SE, Murray EA (2013) Differential effects of amygdala, orbital prefrontal cortex, and prelimbic cortex lesions on goal-directed behavior in rhesus macaques. *J Neurosci* 33:3380-3389. PMC3711145.
- Ribot T (1885) Les Maladies de la personalité. Paris: Alcan.
- Rieckmann A, Karlsson S, Fischer H, Backman L (2012) Increased bilateral frontal connectivity during working memory in young adults under the influence of a dopamine D1 receptor antagonist. *J Neurosci* 32:17067-17072. PMC6621848.
- Riganello F, Prada V, Soddu A, di Perri C, Sannita WG (2019) Circadian Rhythms and Measures of CNS/Autonomic Interaction. *Int J Environ Res Public Health* 16. PMC6651187.
- Rigato E, Minelli A (2013) The great chain of being is still here. *Evolution: Education and Outreach* 6:18.
- Ritchey M, Libby LA, Ranganath C (2015) Cortico-hippocampal systems involved in memory and cognition: the PMAT framework. *Prog Brain Res* 219:45-64.
- Robbins TW, Costa RM (2017) Habits. *Curr Biol* 27: R1200-R1206.
- Robin J, Moscovitch M (2017) Details, gist and schema: hippocampal-neocortical interactions underlying recent and remote episodic and spatial memory. *Current Opinion in Behavioral Sciences* 17:114-123.
- Rolls ET (1996) The Orbitofrontal Cortex. In: Department of Experimental Psychology, p 20 Oxford: University of Oxford.
- Rolls ET (2005) Emotion Explained. New York: Oxford University Press.
- Rolls ET (2008) Emotion, higher-order syntactic thoughts, and consciousness. In: Frontiers of Consciousness: Chichele Lectures (Weiskrantz, L. and Davies, M., eds), pp 131-167 Oxford: Oxford University Press.
- Rolls ET (2019) The cingulate cortex and limbic systems for emotion, action, and memory. *Brain Struct Funct* 224:3001-3018. PMC6875144.
- Romanski LM (2004) Domain specificity in the primate prefrontal cortex. *Cogn Affect Behav Neurosci* 4:421-429.
- Romanski LM, Goldman-Rakic PS (2002) An auditory domain in primate prefrontal cortex. *Nature neuroscience* 5:15-16. PMC2793092.
- Romanski LM, Tian B, Fritz J, Mishkin M, Goldman-Rakic PS, Rauschecker JP (1999) Dual streams of auditory afferents target multiple domains in the primate prefrontal cortex. *Nature neuroscience* 2:1131-1136.
- Romer AS (1955) Vertebrate Body. Philadelphia: W.B. Saunders Company.
- Romer AS (1958) The vertebrate as a dual animal-visceral and somatic. In: ANATOMICAL RECORD, vol. 132, pp 496-496: WILEY-LISS DIV JOHN WILEY & SONS INC, 605 THIRD AVE, NEW YORK, NY 10158-0012.
- Romer AS (1972) The Vertebrate as a Dual Animal — Somatic and Visceral. In: Evolutionary Biology: Volume 6 (Dobzhansky, T. et al., eds), pp 121-156 New York, NY: Springer US.
- Rosati AG (2017) Foraging Cognition: Reviving the Ecological Intelligence Hypothesis. *Trends Cogn Sci* 21:691-702.
- Rose SPR (2005) Human agency in the neurocentric age. *EMBO Rep* 6:1001-1005.
- Rosenthal D (2019) Consciousness and confidence. *Neuropsychologia* 128:255-265.

- Rosenthal D, Weisberg J (2008) Higher-order theories of consciousness. Scholarpedia 3:4407.
- Rosenthal DM (2005) Consciousness and mind. Oxford: Oxford University Press.
- Ross RS, LoPresti ML, Schon K, Stern CE (2013) Role of the hippocampus and orbitofrontal cortex during the disambiguation of social cues in working memory. *Cogn Affect Behav Neurosci* 13:900-915. PMC3796192.
- Roth G (2013) The Long Evolution of Brains and Minds. Bremen: Springer.
- Roth TC, 2nd, Krochmal AR, LaDage LD (2019) Reptilian Cognition: A More Complex Picture via Integration of Neurological Mechanisms, Behavioral Constraints, and Evolutionary Context. *Bioessays* 41:e1900033.
- Roughley N (2021) Human Nature. In: The Stanford Encyclopedia of Philosophy (Zalta, E. N., ed) <https://plato.stanford.edu/archives/spr2021/entries/human-nature/>: Metaphysics Research Lab, Stanford University.
- Rounis E, Maniscalco B, Rothwell JC, Passingham RE, Lau H (2010) Theta-burst transcranial magnetic stimulation to the prefrontal cortex impairs metacognitive visual awareness. *Cogn Neurosci* 1:165-175.
- Ruby E, Maniscalco B, Peters MAK (2018) On a 'failed' attempt to manipulate visual metacognition with transcranial magnetic stimulation to prefrontal cortex. *Conscious Cogn* 62:34-41. PMC5964034.
- Rudebeck PH, Izquierdo A (2022) Foraging with the frontal cortex: A cross-species evaluation of reward-guided behavior. *Neuropsychopharmacology* 47:134-146. PMC8617092.
- Rudebeck PH, Murray EA (2014) The orbitofrontal oracle: cortical mechanisms for the prediction and evaluation of specific behavioral outcomes. *Neuron* 84:1143-1156. PMC4271193.
- Rudy JW, Sutherland RJ (1989) The hippocampal formation is necessary for rats to learn and remember configural discriminations. *Behav Brain Res* 34:97-109.
- Rushworth MF, Behrens TE (2008) Choice, uncertainty and value in prefrontal and cingulate cortex. *Nature neuroscience* 11:389-397.
- Rushworth MF, Noonan MP, Boorman ED, Walton ME, Behrens TE (2011) Frontal cortex and reward-guided learning and decision-making. *Neuron* 70:1054-1069.
- Russell B (1927) An Outline of Philosophy. London: George Allen & Unwin Ltd.
- Russell JA (2003) Core affect and the psychological construction of emotion. *Psychol Rev* 110:145-172.
- Ryle G (1949) The concept of mind. New York: Barnes and Noble.
- Salena MG, Turko AJ, Singh A, Pathak A, Hughes E, Brown C, Balshine S (2021) Understanding fish cognition: a review and appraisal of current practices. *Anim Cogn* 24:395-406.
- Sallet J, Mars RB, Noonan MP, Neubert FX, Jbabdi S, O'Reilly JX, Filippini N, Thomas AG, Rushworth MF (2013) The organization of dorsal frontal cortex in humans and macaques. *J Neurosci* 33:12255-12274. PMC3744647.
- Samuels R (2004) Innateness in cognitive science. *Trends Cogn Sci* 8:136-141.
- Sanes DH, Reh TA, Harris WA (2012) Development of the Nervous System. New York: Elsevier.
- Santelices B (1999) How many kinds of individual are there? *Trends Ecol Evol* 14:152-155.
- Saper CB (1987) Diffuse cortical projection systems: anatomical organization and role in cortical function. In: *Handbook of Physiology 1: The Nervous System Vol V, Higher Functions of the Brain*, vol. V (Mountcastle, V. B. et al., eds), pp 169-210 Bethesda, Maryland: American Physiological Society.
- Saper CB (2002) The central autonomic nervous system: conscious visceral perception and autonomic pattern generation. *Annu Rev Neurosci* 25:433-469.
- Sapolsky RM (1998) Why Zebras Don't Get Ulcers. New York: Freeman.
- Sapolsky RM (2017) Behave: The biology of humans at our best and worst. New York: Penguin Press.
- Satpute AB, Lindquist KA (2019) The Default Mode Network's Role in Discrete Emotion. *Trends Cogn Sci* 23:851-864. PMC7281778.
- Saxe A, Nelli S, Summerfield C (2021) If deep learning is the answer, what is the question? *Nat Rev Neurosci* 22:55-67.
- Schachter S, Singer JE (1962) Cognitive, social, and physiological determinants of emotional state. *Psychol Rev* 69:379-399.
- Schacter D (2001) The Seven Sins of Memory. Boston: Houghton-Mifflin.
- Schacter D, Addis D (2020) Memory and Imagination: Perspectives on constructive episodic simulation. In: *The Cambridge Handbook of the Imagination* (Abraham, A., ed), pp 111-131 Cambridge: Cambridge University Press.
- Schacter DL, Addis DR (2007) On the constructive episodic simulation of past and future events. *Behavioral and Brain Sciences* 30:331-332.
- Schacter DL, Addis DR, Buckner RL (2008) Episodic simulation of future events: concepts, data, and applications. *Ann N Y Acad Sci* 1124:39-60.

- Schacter DL, Benoit RG, De Brigard F, Szpunar KK (2015) Episodic future thinking and episodic counterfactual thinking: intersections between memory and decisions. *Neurobiol Learn Mem* 117:14-21. PMC4071128.
- Schaffner KF (2016) Behaving: What's genetic, what's not, and why should we care? Oxford: Oxford University Press.
- Schaffner KF (2020) Approaches to Multilevel Models of Fear: The What, Where, Why, How, and How Much? In: Levels of Analysis in Psychopathology (Kandler, K. S. et al., eds), pp 384-409 New York: Cambridge University Press.
- Schaffner KF (2020) Commentary on Daniel S. Pine. In: Levels of Analysis in Psychopathology: Cross-disciplinary perspectives (Kandler, K. S. et al., eds), pp 111-124 New York: Cambridge University Press.
- Schaffner KF (submitted) Construct Validity in Psychology and Psychiatry.
- Scherer KR (1984) Emotion as a multicomponent process: A model and some cross-cultural data. *Review of Personality and Social Psychology* 5:37-63.
- Schneider S (2011) The language of thought: A new direction. Boston, MA: MIT Press.
- Schneider S (2019) Artificial You: AI and the future of your mind. Princeton, NJ: Princeton University Press.
- Schoenbaum G, Roesch MR, Stalnaker TA, Takahashi YK (2011) Orbitofrontal Cortex and Outcome Expectancies: Optimizing behavior and sensory perception. In: Neurobiology of Sensation and Reward (Gottfried, J. A., ed) Boca Raton: CRC Press/Taylor & Francis.
- Schroder T, Thagard P (2013) The affective meanings of automatic social behaviors: three mechanisms that explain priming. *Psychol Rev* 120:255-280.
- Schroer SA (2021) Jakob von Uexküll: The Concept of Umwelt and its Potentials for an Anthropology Beyond the Human. *Ethnos* 86:132-152.
- Schulkin J, McEwen BS, Gold PW (1994) Allostasis, amygdala and anticipatory angst. *Neuroscience and Biobehavioral Reviews* 18.
- Schultz W (1998) Predictive reward signal of dopamine neurons. *J Neurophysiol* 80:1-27.
- Schultz W (2013) Updating dopamine reward signals. *Current opinion in neurobiology* 23:229-238. PMC3866681.
- Schultz W (2017) Reward prediction error. *Curr Biol* 27: R369-R371.
- Scolari M, Seidl-Rathkopf KN, Kastner S (2015) Functions of the human frontoparietal attention network: Evidence from neuroimaging. *Curr Opin Behav Sci* 1:32-39. PMC4936532.
- Scoville WB, Milner B (1957) Loss of recent memory after bilateral hippocampal lesions. *Journal of Neurology and Psychiatry* 20:11-21.
- Searle J (2008) Reductionism and the Irreducibility of Consciousness. In: *Emergence: Contemporary readings in philosophy and science* (Bedau, M. and Humphreys, P., eds) Cambridge, MA: MIT Press.
- Searle JR (1980) Minds, brains, and programs. *Behavioral and Brain Sciences* 3:417-424.
- Seed A, Tomasello M (2010) Primate cognition. *Top Cogn Sci* 2:407-419.
- Seligman MEP (2002) Authentic Happiness: Using the new positive psychology to realize your potential for lasting fulfillment. New York: Free Press.
- Selye H (1975) Homeostasis and Heterostasis. In: *Trauma: Clinical and Biological Aspects* (Day, S. B., ed), pp 25-29 Boston, MA: Springer US.
- Semendeferi K, Damasio H, Frank R, Van Hoesen GW (1997) The evolution of the frontal lobes: a volumetric analysis based on three-dimensional reconstructions of magnetic resonance scans of human and ape brains. *Journal of human evolution* 32:375-388.
- Semendeferi K, Teffer K, Buxhoeveden DP, Park MS, Bludau S, Amunts K, Travis K, Buckwalter J (2011) Spatial organization of neurons in the frontal pole sets humans apart from great apes. *Cereb Cortex* 21:1485-1497.
- Sergent C (2018) The offline stream of conscious representations. *Philos Trans R Soc Lond B Biol Sci* 373. PMC6074088.
- Sergent C, Corazzol M, Labouret G, Stockart F, Wexler M, King JR, Meyniel F, Pressnitzer D (2021) Bifurcation in brain dynamics reveals a signature of conscious processing independent of report. *Nat Commun* 12:1149. PMC7895979.
- Sergent C, Dehaene S (2004) Neural processes underlying conscious perception: experimental findings and a global neuronal workspace framework. *J Physiol Paris* 98:374-384.
- Sergent C, Rees G (2007) Conscious access overflows overt report. *Behav Brain Sci* 30:523-524.
- Seth A (2021) Being You: A new science of consciousness. New York: Penguin Random House LLC.
- Seth AK (2013) Interoceptive inference, emotion, and the embodied self. *Trends Cogn Sci* 17:565-573.
- Seth AK (2019) From Unconscious Inference to the Beholder's Share: Predictive Perception and Human Experience. *European Review* 27:378-410.

- Seth AK, Dienes Z, Cleeremans A, Overgaard M, Pessoa L (2008) Measuring consciousness: relating behavioural and neurophysiological approaches. *Trends Cogn Sci* 12:314-321. PMC2767381.
- Seth AK, Friston KJ (2016) Active interoceptive inference and the emotional brain. *Philos Trans R Soc Lond B Biol Sci* 371. PMC5062097.
- Shallice T (1988) Information processing models of consciousness. In: *Consciousness in contemporary science* (Marcel, A. and Bisiach, E., eds), pp 305-333 Oxford: Oxford U. Press.
- Sharpe MJ, Stalnaker T, Schuck NW, Killcross S, Schoenbaum G, Niv Y (2019) An Integrated Model of Action Selection: Distinct Modes of Cortical Control of Striatal Decision Making. *Annu Rev Psychol* 70:53-76.
- Shaver E, Maniscalco B, Lau H (2008) Awareness as Confidence. *Anthropology and Philosophy* 9:58-65.
- Shea N, Boldt A, Bang D, Yeung N, Heyes C, Frith CD (2014) Supra-personal cognitive control and metacognition. *Trends Cogn Sci* 18:186-193. PMC3989995.
- Shea N, Frith CD (2016) Dual-process theories and consciousness: the case for 'Type Zero' cognition. *Neurosci Conscious* 2016:niw005. PMC6084555.
- Shea N, Frith CD (2019) The Global Workspace Needs Metacognition. *Trends Cogn Sci* 23:560-571.
- Shekhar M, Rahnev D (2018) Distinguishing the Roles of Dorsolateral and Anterior PFC in Visual Metacognition. *J Neurosci* 38:5078-5087.
- Shepherd GM (2007) Perspectives on olfactory processing, conscious perception, and orbitofrontal cortex. *Ann N Y Acad Sci* 1121:87-101.
- Sherman SM, Usrey WM (2021) Cortical control of behavior and attention from an evolutionary perspective. *Neuron* 109:3048-3054.
- Sherrington CS (1906) *The Integrative Action of the Nervous System*. New Haven: Yale U. Press.
- Sherrington CS (1933) *The Brain and its Mechanism*. Cambridge: University Press.
- Sherwood CC, Broadfield DC, Holloway RL, Gannon PJ, Hof PR (2003) Variability of Broca's area homologue in African great apes: implications for language evolution. *Anat Rec A Discov Mol Cell Evol Biol* 271:276-285.
- Sherwood CC, Subiaul F, Zawidzki TW (2008) A natural history of the human mind: tracing evolutionary changes in brain and cognition. *J Anat* 212:426-454. PMC2409100.
- Shettleworth SJ (2001) Animal cognition and animal behaviour. *Animal Behaviour* 61:277-286.
- Shuttleworth SJ (2009) The evolution of comparative cognition: is the snark still a boojum? *Behav Processes* 80:210-217.
- Shuttleworth SJ (2010) Clever animals and killjoy explanations in comparative psychology. *Trends Cogn Sci* 14:477-481.
- Shields C (2020) Aristotle's Psychology. In: *The Stanford Encyclopedia of Philosophy* (Zalta, E. N., ed) <https://plato.stanford.edu/archives/win2020/entries/aristotle-psychology/>, retrieved Feb 24, 2021: Metaphysics Research Lab, Stanford University.
- Shimamura AP (1995) Memory and the prefrontal cortex. *Ann N Y Acad Sci* 769:151-159.
- Shubin N (2008) *Your Inner Fish: A journey into the 3.5-billion-year history of the human body*. New York: Pantheon Books.
- Shubin N, Tabin C, Carroll S (2009) Deep homology and the origins of evolutionary novelty. *Nature* 457:818-823.
- Shugg W (1968) The Cartesian Beast-Machine in English Literature (1663-1750). *J Hist Ideas* 29:279-292.
- Shweder RA, Bourne L (1984) Does the concept of the person vary cross-culturally? In: *Culture theory: Essays on mind, self, and emotion* (Shweder, R. A. and LeVine, R. A., eds), pp 158-199 New York: Cambridge University Press.
- Simmler LD, Ozawa T (2019) Neural circuits in goal-directed and habitual behavior: Implications for circuit dysfunction in obsessive-compulsive disorder. *Neurochem Int* 129:104464.
- Singer P (2017) Twenty Questions. *Journal of Practical Ethics*.
- Skillings DJ (2017) Life is not easily bounded, <https://aeon.co/essays/what-constitutes-an-individual-organism-in-biology>, retrieved Aug 28, 2020.
- Skinner BF (1938) *The behavior of organisms: An experimental analysis*. New York: Appleton-Century-Crofts.
- Skinner BF (1948) *Walden Two*. Indianapolis, IN: Hackett Publishing.
- Skinner BF (1957) *Verbal Behavior*. New York: Appleton-Century-Crofts.
- Skinner BF, Solomon HC, Lindsley OR (1954) A New Method for the Experimental Analysis of the Behavior of Psychotic Patients. *Journal of Nervous and Mental Disease* 120:403-408.
- Slowik E (2017) Descartes' Physics. In: *The Stanford Encyclopedia of Philosophy* (Zalta, E. N., ed) <https://plato.stanford.edu/archives/fall2017/entries/descartes-physics/>, retrieved Jan 8, 2021: Metaphysics Research Lab, Stanford University.

- Smaers JB, Gomez-Robles A, Parks AN, Sherwood CC (2017) Exceptional Evolutionary Expansion of Prefrontal Cortex in Great Apes and Humans. *Curr Biol* 27:714-720.
- Smart JJC (1959) Sensations and Brain Processes. *The Philosophical Review* 68:141-156.
- Smith KS, Graybiel AM (2016) Habit formation. *Dialogues Clin Neurosci* 18:33-43. PMC4826769.
- Solms M (2021) *The Hidden Spring: A journey to the source of consciousness*. London: Profile Books Ltd.
- Solms M, Panksepp J (2012) The "id" knows more than the "ego" admits: neuropsychoanalytic and primal consciousness perspectives on the interface between affective and cognitive neuroscience. *Brain Sci* 2:147-175. PMC4061793.
- Sonuga-Barke EJ, Castellanos FX (2007) Spontaneous attentional fluctuations in impaired states and pathological conditions: a neurobiological hypothesis. *Neuroscience and Biobehavioral Reviews* 31:977-986.
- Soon CS, Brass M, Heinze HJ, Haynes JD (2008) Unconscious determinants of free decisions in the human brain. *Nature neuroscience* 11:543-545.
- Soreq E, Violante IR, Daws RE, Hampshire A (2021) Neuroimaging evidence for a network sampling theory of individual differences in human intelligence test performance. *Nat Commun* 12:2072. PMC8024400.
- Sperduti M, Delaveau P, Fossati P, Nadel J (2011) Different brain structures related to self- and external-agency attribution: a brief review and meta-analysis. *Brain Struct Funct* 216:151-157.
- Sperling G (1960) The information available in brief visual presentations. *Psychological Monographs* 74:1-29.
- Spitzer D, White SJ, Mandy W, Burgess PW (2017) Confabulation in children with autism. *Cortex* 87:80-95.
- Squire L (1987) *Memory and Brain*. New York: Oxford.
- Stapp H (1993) *Mind, Matter, and Quantum Mechanics*. Berlin: Springer Verlag.
- Sterling P (2012) Allostasis: a model of predictive regulation. *Physiol Behav* 106:5-15.
- Sternson SM (2013) Hypothalamic survival circuits: blueprints for purposive behaviors. *Neuron* 77:810-824.
- Stich SP (1975) Introduction: The Idea of Innateness. In: *Innate Ideas* (Stich, S. P., ed), pp 1-22 Berkeley, CA: University of California Press.
- Stone T, Webb B, Adden A, Weddig NB, Honkanen A, Templin R, Wcislo W, Scimeca L, Warrant E, Heinze S (2017) An Anatomically Constrained Model for Path Integration in the Bee Brain. *Curr Biol* 27:3069-3085 e3011. PMC6196076.
- Strawson G (1999) 'The Self'. In: *Models of The Self* (Gallagher, S. and Shear, J., eds), pp 1-24 Exeter: Imprint Academic.
- Strick M, Dijksterhuis A, Bos MW, Sjoerdsma A, van Baaren RB, Nordgren LF (2011) A meta-analysis on unconscious thought effects. *Social Cognition* 29:738-762.
- Striedter GF (2005) *Principles of Brain Evolution*. Sunderland: Sinauer Associates.
- Striedter GF, Northcutt RG (2020) *Brains Through Time: A natural history of vertebrates*. New York: Oxford University Press.
- Striedter GF, Northcutt RG (2021) The Independent Evolution of Dorsal Pallia in Multiple Vertebrate Lineages. *Brain Behav Evol* 1-12.
- Stucki S (2020) Towards a Theory of Legal Animal Rights: Simple and Fundamental Rights. *Oxf J Leg Stud* 40:533-560. PMC7714088.
- Stuss DT, Benson DF (1986) *The Frontal Lobes*. New York: Raven Press.
- Subbotin VM (2016) Striated muscles in visceral organs of vertebrates. *Journal of Histology and Histopathology* 3:3.
- Suboski MD (1992) Releaser-induced recognition learning by amphibians and reptiles. *Animal Learning & Behavior* 20:63-82.
- Suddendorf T (2013) *The Gap: The science of what separates us from other animals*. New York: Basic Books.
- Suddendorf T, Addis DR, Corballis MC (2009) Mental time travel and the shaping of the human mind. *Philos Trans R Soc Lond B Biol Sci* 364:1317-1324. PMC2666704.
- Suddendorf T, Bulley A, Miloyan B (2018) Prospection and natural selection. *Current Opinion in Behavioral Sciences* 24:26-31.
- Suddendorf T and Corballis (1997) Mental time travel and the evolution of the human mind. *Genetic, Social, and General Psychology Monographs*. 123: 1330167.
- Suddendorf T, Corballis MC (2007) The evolution of foresight: What is mental time travel, and is it unique to humans? *Behav Brain Sci* 30:299-313; discussion 313-251.
- Suddendorf T, Corballis MC (2010) Behavioural evidence for mental time travel in nonhuman animals. *Behav Brain Res* 215:292-298.
- Suddendorf T, Redshaw J, Bulley A (2022) *The Invention of Tomorrow*. New York: Basic Books.

- Sui J, Humphreys GW (2015) The Integrative Self: How Self-Reference Integrates Perception and Memory. *Trends Cogn Sci* 19:719-728.
- Suryanarayana SM, Perez-Fernandez J, Robertson B, Grillner S (2021) The Lamprey Forebrain - Evolutionary Implications. *Brain Behav Evol* 1-16.
- Suryanarayana SM, Robertson B, Grillner S (2022) The neural bases of vertebrate motor behaviour through the lens of evolution. *Philos Trans R Soc Lond B Biol Sci*.
- Suryanarayana SM, Robertson B, Wallen P, Grillner S (2017) The Lamprey Pallium Provides a Blueprint of the Mammalian Layered Cortex. *Curr Biol* 27:3264-3277 e3265.
- Sutton RS, Barto AG (1998) Reinforcement Learning: An introduction. Cambridge, MA: The MIT Press.
- Suzuki S (2022) Inferences regarding oneself and others in the human brain. *PLoS Biol* 20:e3001662. PMC9126371.
- Swanson LW (1983) The hippocampus and the concept of the limbic system. In: *Neurobiology of the Hippocampus* (Seifert, W., ed), pp 3-19 London: Academic Press.
- Swanson LW (2002) Brain Architecture: Understanding the Basic Plan. Oxford: Oxford University Press.
- Sytnyk V, Leshchyns'ka I, Schachner M (2017) Neural Cell Adhesion Molecules of the Immunoglobulin Superfamily Regulate Synapse Formation, Maintenance, and Function. *Trends Neurosci* 40:295-308.
- Takeuchi T, Tamura M, Tse D, Kajii Y, Fernandez G, Morris RGM (2022) Brain region networks for the assimilation of new associative memory into a schema. *Mol Brain* 15:24. PMC8943948.
- Taschereau-Dumouchel V, Michel M, Lau H, Hofmann SG, LeDoux JE (2022) Putting the "mental" back in "mental disorders": a perspective from research on fear and anxiety. *Mol Psychiatry*.
- Teichman J (1985) The Definition of Person. *Philosophy* 60:175-185.
- Terman LM (1916) The measurement of intelligence. Boston: Houghton Mifflin.
- Terman LM, Merrill MA (1960) Stanford-Binet Intelligence Scale. Boston: Houghton Mifflin.
- Terracciano A, McCrae RR (2006) Cross-cultural studies of personality traits and their relevance to psychiatry. *Epidemiol Psychiatr Soc* 15:176-184. PMC2756039.
- Thagard P, Wood JV (2015) Eighty phenomena about the self: representation, evaluation, regulation, and change. *Front Psychol* 6:334. PMC4375917.
- Thiery JP (2003) Cell adhesion in development: a complex signaling network. *Curr Opin Genet Dev* 13:365-371.
- Thompson RF (2005) In search of memory traces. *Annu Rev Psychol* 56:1-23.
- Thompson RF, Madigan SA (2005) Memory: The key to consciousness. Washington, D. C.: Joseph Henry Press.
- Thorndike EL (1898) Animal intelligence: An experimental study of the associative processes in animals. *Psychological Monographs* 2:109.
- Timberlake W, Gawley DJ, Lucas GA (1987) Time horizons in rats foraging for food in temporally separated patches. *J Exp Psychol Anim Behav Process* 13:302-309.
- Timmann D, Baier PC, Diener HC, Kolb FP (2000) Classically conditioned withdrawal reflex in cerebellar patients. 1. Impaired conditioned responses. *Exp Brain Res* 130:453-470.
- Tinbergen N (1955) The Study of Instinct. Oxford: Clarendon Press.
- Todd PM, Hills TT (2020) Foraging in Mind. *Current Directions in Psychological Science* 29:309-315.
- Tolman EC (1932) Purposive behavior in animals and men. New York: Century.
- Tolman EC (1948) Cognitive maps in rats and men. *Psychol Rev* 55:189-208.
- Tolman EC (1949a) There is more than one kind of learning. *Psychol Rev* 56:144-155.
- Tolman EC (1949b) Discussion. *J Pers* 18:48-50.
- Tomasello M (2008) Origins of Human Communication. Cambridge, MA: MIT Press.
- Tomasello M (2018) How children come to understand false beliefs: A shared intentionality account. *Proc Natl Acad Sci U S A* 115:8491-8498. PMC6112688.
- Tomasello M, Call J (1997) Primate Cognition. Oxford: Oxford University Press.
- Tomasello M, Rakoczy H (2003) What Makes Human Cognition Unique? From Individual to Shared to Collective Intentionality. *Mind & Language* 18:121-147.
- Tononi G (2012) Integrated information theory of consciousness: an updated account. *Archives italiennes de biologie* 150:293-329.
- Tononi G, Boly M, Massimini M, Koch C (2016) Integrated information theory: from consciousness to its physical substrate. *Nat Rev Neurosci* 17:450-461.
- Tononi G, Koch C (2015) Consciousness: here, there and everywhere? *Philos Trans R Soc Lond B Biol Sci* 370. PMC4387509.

- Tramacere A, Allen C (2022) Temporal binding: digging into animal minds through time perception. *Synthese* 200:1-24.
- Trubutschek D, Marti S, Ojeda A, King JR, Mi Y, Tsodyks M, Dehaene S (2017) A theory of working memory without consciousness or sustained activity. *Elife* 6.
- Trubutschek D, Marti S, Ueberschar H, Dehaene S (2019) Probing the limits of activity-silent non-conscious working memory. *Proc Natl Acad Sci U S A* 116:14358-14367. PMC6628638.
- Tsuchiya N, Taguchi S, Saigo H (2016) Using category theory to assess the relationship between consciousness and integrated information theory. *Neurosci Res* 107:1-7.
- Tsutsui KI, Oyama K, Nakamura S, Iijima T (2016) Comparative Overview of Visuospatial Working Memory in Monkeys and Rats. *Front Syst Neurosci* 10:99. PMC5159432.
- Tucker DM, Luu P (2021) Motive control of unconscious inference: The limbic base of adaptive Bayes. *Neuroscience and Biobehavioral Reviews* 128:328-345.
- Tulving E (1972) Episodic and semantic memory. In: *Organization of Memory* (Tulving, E. and Donaldson, W., eds), pp 382-403 New York: Academic Press.
- Tulving E (1983) Elements of episodic memory. New York: Oxford.
- Tulving E (1985) Ebbinghaus's memory: What did he learn and remember? *J Exp Psychol Learn Mem Cog* 11:485-490.
- Tulving E (2001) The origin of autonoesis in episodic memory. In: *The Nature of Remembering: Essays in Honor of Robert G Crowder* (Roediger, H. L. et al., eds), pp 17-34 Washington, D.C.: Am Psychol Assoc.
- Tulving E (2002) Episodic memory: from mind to brain. *Annu Rev Psychol* 53:1-25.
- Tulving E (2005) Episodic memory and autonoesis: Uniquely human? In: *The Missing Link in Cognition* (Terrace, H. S. and Metcalfe, J., eds), pp 4-56 New York: Oxford University Press.
- Turing AM (1950) Computing machinery and intelligence. *Mind* 59:433-460.
- Turing AM (2009) Computing Machinery and Intelligence. In: *Parsing the Turing Test* (Epstein, R. et al., eds), pp 23-66 Dordrecht: Springer.
- Turner KM, Parkes SL (2020) Prefrontal regulation of behavioural control: Evidence from learning theory and translational approaches in rodents. *Neuroscience and Biobehavioral Reviews* 118:27-41.
- Tweedale S (2017) Panpsychism and vitalism about stellar objects: a response to Matloff. In: *Popcorn Machine: Politics and Philosophy Blog*, vol. 2021 <https://stephentweedale.wordpress.com/2017/06/19/panpsychism-and-vitalism-about-stellar-objects-a-response-to-matloff/>, retrieved Feb 24, 2021.
- Tye M (2021) Vagueness and the Evolution of Consciousness: Through the looking glass. Oxford: Oxford University Press.
- Ungerleider LG, Mishkin M (1982) Two Cortical Visual Systems. In: *Analysis of Visual Behavior* (Ingle, D. J. et al., eds), pp 549-586 Cambridge: MIT Press.
- Vaccaro AG, Fleming SM (2018) Thinking about thinking: A coordinate-based meta-analysis of neuroimaging studies of metacognitive judgements. *Brain Neurosci Adv* 2:2398212818810591. PMC6238228.
- van den Heuvel MP, Scholtens LH, de Lange SC, Pijnenburg R, Cahn W, van Haren NEM, Sommer IE, Bozzali M, Koch K, Boks MP, Repple J, Pievani M, Li L, Preuss TM, Rilling JK (2019) Evolutionary modifications in human brain connectivity associated with schizophrenia. *Brain* 142:3991-4002. PMC6906591.
- van Duijn M (2017) Phylogenetic origins of biological cognition: convergent patterns in the early evolution of learning. *Interface Focus* 7:20160158. PMC5413897.
- van Ede F, Board AG, Nobre AC (2020) Goal-directed and stimulus-driven selection of internal representations. *Proc Natl Acad Sci U S A* 117:24590-24598. PMC7533705.
- Van Gulick R (2021) Consciousness. In: *The Stanford Encyclopedia of Philosophy* (Zalta, E. N., ed) <https://plato.stanford.edu/archives/win2021/entries/consciousness/>; Metaphysics Research Lab, Stanford University.
- van Kesteren MT, Fernandez G, Norris DG, Hermans EJ (2010) Persistent schema-dependent hippocampal-neocortical connectivity during memory encoding and postencoding rest in humans. *Proc Natl Acad Sci U S A* 107:7550-7555. PMC2867741.
- Vandekerckhove M (2021) A Continuum of Consciousness: From Wakefulness and Sentience Towards Anoetic Consciousness. *Journal of Consciousness Studies*, 28(7-8) p.174-182
- Vandekerckhove M, Bulnes LC, Panksepp J (2014) The emergence of primary anoetic consciousness in episodic memory. *Front Behav Neurosci* 7:210. PMC3879583.

- Vandekerckhove M, Panksepp J (2011) A neurocognitive theory of higher mental emergence: from anoetic affective experiences to noetic knowledge and autonoetic awareness. *Neuroscience and Biobehavioral Reviews* 35:2017-2025.
- Varela FJ, Thompson E, Rosch E (1991) *The Embodied Mind: Cognitive science and human experience*. Cambridge, MA: The MIT Press.
- Vasconcelos M, Monteiro T, Kacelnik A (2012) On the flexibility of lizards' cognition: a comment on Leal & Powell (2011). *Biol Lett* 8:42-43; discussion 44-45. PMC3259984.
- Vernet M, Stengel C, Quentin R, Amengual JL, Valero-Cabré A (2019) Entrainment of local synchrony reveals a causal role for high-beta right frontal oscillations in human visual consciousness. *Sci Rep* 9:14510. PMC6787242.
- Volk T (2017) *Quarks to Culture: How we came to be*. New York: Columbia University Press.
- Volk T (2020) The Metapattern of General Evolutionary Dynamics and the Three Dynamical Realms of Big History. *J Big History* 4:31-53.
- Volman I, Roelofs K, Koch S, Verhagen L, Toni I (2011) Anterior prefrontal cortex inhibition impairs control over social emotional actions. *Curr Biol* 21:1766-1770.
- von Uexküll J (1934) *Kompositionslehre der Natur: Biologie als undogmat. Naturwiss. : ausgew. Schr: Propyläen-Verl.*
- Vygotsky LS (1934/1987) *Thinking and speech. The collected works of Lev Vygotsky* (Vol. 1). New York: Plenum Press.
- Wallace DL, Vytlacil JJ, Nomura EM, Gibbs SE, D'Esposito M (2011) The dopamine agonist bromocriptine differentially affects fronto-striatal functional connectivity during working memory. *Front Hum Neurosci* 5:32. PMC3071499.
- Wallis JD (2012) Cross-species studies of orbitofrontal cortex and value-based decision-making. *Nature neuroscience* 15:13-19. PMC3549638.
- Wallis JD (2019) Chapter 15 - Reward. In: *Handbook of Clinical Neurology*, vol. 163 (D'Esposito, M. and Grafman, J. H., eds), pp 281-294: Elsevier.
- Walters SD (2018) In Defense of Identity Politics. *Signs* 43:473-488.
- Wang SH, Morris RG (2010) Hippocampal-neocortical interactions in memory formation, consolidation, and reconsolidation. *Annu Rev Psychol* 61:49-79, C41-44.
- Wasman M, Flynn JP (1962) Directed attack elicited from hypothalamus. *Archives of Neurology* 6:220-227.
- Wason PC, Evans JSBT (1974) Dual processes in reasoning? *Cognition* 3:141-154.
- Watanabe T (2021) Causal roles of prefrontal cortex during spontaneous perceptual switching are determined by brain state dynamics. *Elife* 10. PMC8631941.
- Waterhouse WC (2007) The source of the stream, <https://www.nybooks.com/articles/2007/11/22/the-source-of-the-stream/>, retrieved April 11, 2022. (Review, T. N. Y., ed) New York: The New York Review of Books.
- Watson JD, Crick FH (1953) Molecular structure of nucleic acids; a structure for deoxyribose nucleic acid. *Nature* 171:737-738.
- Watt DF (2000) Emotion and Consciousness: Part II. *Journal of Consciousness Studies* 7:72-84.
- Wearing D (2005) *Forever Today: A memoir of love and amnesia*. London: Doubleday.
- Weinhammer V, Fritsch M, Chikermane M, Eckert AL, Kanthak K, Stuke H, Kaminski J, Sterzer P (2021) An active role of inferior frontal cortex in conscious experience. *Curr Biol* 31:2868-2880 e2868.
- Weinberger DR, Glick ID, Klein DF (2015) Whither Research Domain Criteria (RDoC)?: The Good, the Bad, and the Ugly. *JAMA Psychiatry* 72:1161-1162.
- Weinberger NM (1995) Retuning the brain by fear conditioning. In: *The Cognitive Neurosciences* (Gazzaniga, M. S., ed), pp 1071-1090 Cambridge, MA: The MIT Press.
- Weiskrantz L (1997) *Consciousness lost and found: A neuropsychological exploration*. New York: Oxford University Press.
- Wheeler MA, Stuss DT, Tulving E (1997) Toward a theory of episodic memory: the frontal lobes and autonoetic consciousness. *Psychol Bull* 121:331-354.
- Wierzbicka A (1994) Emotion, language and Cultural Scripts. In: *Emotion and Culture: Empirical studies of mutual influence* (Kitayama, S. and Markus, H. R., eds), pp 133-196 Washington, DC: American Psychological Association.
- Wilson RA, Barker MJ (2019) Biological Individuals. In: *The Stanford Encyclopedia of Philosophy* (Zalta, E. N., ed): Metaphysics Research Lab, Stanford University.

- Wilson RA, Foglia L (2017) Embodied Cognition. In: The Stanford Encyclopedia of Philosophy (Zalta, E. N., ed) <https://plato.stanford.edu/archives/spr2017/entries/embodied-cognition/>: Metaphysics Research Lab, Stanford University.
- Wilson TD (1994) The Proper Protocol: Validity and Completeness of Verbal Reports. *Psychological Science* 5:249-252.
- Winkielman P, Ziembowicz M, Nowak A (2015) The coherent and fluent mind: how unified consciousness is constructed from cross-modal inputs via integrated processing experiences. *Front Psychol* 6:83. PMC4327174.
- Winsler A, Fernyhough C, Montero I (eds.) (2009) Private Speech, Executive Functioning, and the Development of Verbal Self-Regulation. Cambridge: Cambridge University Press.
- Wise SP (2008) Forward frontal fields: phylogeny and fundamental function. *Trends Neurosci* 31:599-608.
- Wittgenstein L (1958) Philosophical Investigations. Oxford: Basil Blackwell.
- Wunderlich K, Dayan P, Dolan RJ (2012) Mapping value based planning and extensively trained choice in the human brain. *Nature neuroscience* 15:786-791. PMC3378641.
- Xu R, Bichot NP, Takahashi A, Desimone R (2022) The cortical connectome of primate lateral prefrontal cortex. *Neuron* 110:312-327 e317. PMC8776613.
- Yeterian EH, Pandya DN, Tomaiuolo F, Petrides M (2012) The cortical connectivity of the prefrontal cortex in the monkey brain. *Cortex* 48:58-81. PMC3161133.
- Zamani A, Carhart-Harris R, Christoff K (2022) Prefrontal contributions to the stability and variability of thought and conscious experience. *Neuropsychopharmacology* 47:329-348. PMC8616944.
- Zeidman P, Maguire EA (2016) Anterior hippocampus: the anatomy of perception, imagination and episodic memory. *Nat Rev Neurosci* 17:173-182. PMC5358751.
- Zeithamova D, Mack ML, Braunlich K, Davis T, Seger CA, van Kesteren MTR, Wutz A (2019) Brain Mechanisms of Concept Learning. *J Neurosci* 39:8259-8266. PMC6794919.
- Zeman A (2001) Consciousness. *Brain* 124:1263-1289.
- Zerilli J (2022) From dualism to deismReality+: Virtual Worlds and the Problems of Philosophy David J. Chalmers Norton, 2022. 544 pp. *Science* 375:503.