# References

Additional of the second of th

In this section, references are provided for quotations and the sources of various specific topics in the text. When I thought it might not be obvious, the topic is defined by a word or phrase immediately preceding the reference. The list is organized in chapter sequence but not all chapters have references.

## 3. The World Moves by Itself

History of momentum: Freely, J. (2010). Aladdin's Lamp: How Greek Science Came to Europe through the Islamic World. Vintage Books.

### 5. Reasons Why

Just World Fallacy: Lerner, M. J., and C. H. Simmons. (1966). "Observer's Reaction to the 'Innocent Victim': Compassion or Rejection?" Journal of Personality and Social Psychology 4 (2): 203.

#### 8. Memories and Causes

Russell quote: Russell, B. (1913). "On the Notion of Cause." Proceedings of the Aristotelian Society 13: 1–26.

#### 14. Planets of Belief

Dorothy Martin: Tavris, C., and E. Aronson. (2006). Mistakes Were Made (But Not by Me): Why We Justify Foolish Beliefs, Bad Decisions, and Hurtful Acts. Houghton Mifflin Harcourt.

## 15. Accepting Uncertainty

Catechism of the Catholic Church: "Catechism of the Catholic Church—The Transmission of Divine Revelation." Accessed December 10, 2015. http://www.vatican.va/archive/ccc\_css/archive/catechism/p181c2a2.htm.

## 16. What Can We Know about the World without Actually Looking at It?

National Academy of Sciences on methodological naturalism: National Academy of Sciences. (1998). *Teaching about Evolution and the Nature of Science*. National Academy Press.

Huxley, A. (1957). The Doors of Perception. Chatto & Windus.

Carhart-Harris and Nutt: Halberstadt, A., and M. Geyer. (2012). "Do Psychedelics Expand the Mind by Reducing Brain Activity?" *Scientific American*. Accessed December 10, 2015. http://www.scientificamerican.com/article/do-psychedelics-expand-mind-reducing-brain-activity/.

### 17. Who Am I?

National Catholic Bioethics Center: "Resources." FAQ. Accessed December 10, 2015. http://www.ncbcenter.org/page.aspx?pid=1287.

## 18. Abducting God

Nietzsche, F. (1882). The Gay Science. Walter Kaufmann, trans. with commentary. (Vintage Books, March 1974).

### 19. How Much We Know

Newcomb, S. (1888). Sidereal Messenger 7, 65.

Michelson, A. A. (1894). Speech delivered at the dedication of the Ryerson Physics Lab, University of Chicago. Quoted in *Annual Register* 1896, 159.

Born, M. (1928). Remarks to visitors to Göttigen University. Quoted by S. W. Hawking. (1988). A Brief History of Time. Bantam Books.

Hawking, S. W. (1980). "Is the End in Sight for Theoretical Physics? An Inaugural Lecture." Cambridge University Press.

Hume, D. (1748). An Enquiry Concerning Human Understanding. Reprinted by Oxford University Press, 1999.

## 21. Interpreting Quantum Mechanics

Petersen, A. (1963). "The Philosophy of Niels Bohr." Bulletin of the Atomic Scientists 19, no. 7 (September 1963).

## 22. The Core Theory

Wilczek, F. (2015). A Beautiful Question: Finding Nature's Deep Design. Penguin Press.

### 23. The Stuff of Which We Are Made

Limits on new forces: Long, J. C., et al. (2003). "Upper Limits to Submillimeter-Range Forces from Extra Space-Time Dimensions." Nature 421: 922.

## 25. Why Does the Universe Exist?

Leibniz, G. (1697). "On the Ultimate Origination of Things." Reprinted in *Philosophical Essays* (1989). R. Ariew, trans. D. Garber, ed. Hackett Classics.

Parfit, D. (1998). "Why Anything? Why This?" London Review of Books 20, 24.

## 26. Body and Soul

Princess Elisabeth's correspondence with Descartes: Nye, A. (1999). The Princess and the Philosopher. Rowman & Littlefield.

## 27. Death Is the End

Studies testing out-of-body experiences: Lichfield, G. "The Science of Near-Death Experiences." *The Atlantic*. March 10, 2015. Accessed December 16, 2015. http://www.theatlantic.com/magazine/archive/2015/04/the-science-of-near-death-experiences/386231/.

## 28. The Universe in a Cup of Coffee

Aaronson, S., et al. (2014). "Quantifying the Rise and Fall of Complexity in Closed Systems: The Coffee Automaton."

## 29. Light and Life

NASA definition of life: Joyce, G. F. (1995). The RNA World: Life Before DNA and Protein. Cambridge University Press.

Schrödinger, E. (1944). What Is Life? Cambridge University Press.

# 30. Funneling Energy

Hoffman, P. (2012). Life's Ratchet: How Molecular Machines Extract Order from Chaos. Basic Books.

# 31. Spontaneous Organization

Schelling, T. C. (1969). "Models of Segregation." American Economic Review 59 (2): 488. Friston, K. (2013). "Life As We Know It." Journal of the Royal Society Interface 10: 20130475.

# 32. The Origin and Purpose of Life

Watson, J. D., and H.F.C. Crick. (1953). "A Structure for Deoxyribose Nucleic Acid."

Nature 171: 737.

Bartel, D. P., and J. W. Szostak. (1993). "Isolation of New Ribozymes from a Large Pool of Random Sequences." Science 261 (5127): 1411.

Lincoln, T. A., and G. F. Joyce. "Self-Sustained Replication of an RNA Enzyme." Science 323 (5918): 1229.

Hoyle, F. (1981). "Hoyle on Evolution." Nature 294 (5837): 105.

## 33. Evolution's Bootstraps

Lenski's experiment: Barrick, J. E., et al. (2009). "Genome Evolution and Adaptation in a Long-Term Experiment with Escherichia Coli." *Nature* 461 (7268): 1243.

## 34. Searching through the Landscape

Evolution as a search strategy: Chastain, E., et al. (2014). "Algorithms, Games, and Evolution." Proceedings of the National Academy of Sciences 111 (29): 10620.

Robby the Robot: Mitchell, M. (2009). Complexity: A Guided Tour. Oxford University Press.

Reducibly complex mousetraps: McDonald, J. A. (n.d.). "A Reducibly Complex Mousetrap." Accessed December 10, 2015. http://udel.edu/~mcdonald/mousetrap.html.

Fidelibus, A. "Mousetrap Evolution through Natural Selection." Accessed December 10, 2015. http://www.fidelibus.com/mousetrap/.

Dagg, J. L. (2011). "Exploring Mouse Trap History." Evolution: Education and Outreach 4: 397.

## 35. Emergent Purpose

NABT statement and Smith/Plantinga letter: "Science and Religion, Methodology and Humanism | NCSE." Accessed December 10, 2015. http://ncse.com/religion/science-religion-methodology-humanism.

Plantinga, A. (2011). Where the Conflict Really Lies: Science, Religion, and Naturalism. Oxford University Press.

## 36. Are We the Point?

Adams, F. C. (2008). "Stars in Other Universes: Stellar Structure with Different Fundamental Constants." Journal of Cosmology and Astroparticle Physics 8: 010.

## 37. Crawling into Consciousness

MacIver, M. A. (2009). "Neuropathology: From Morphological Computation to Planning." In *The Cambridge Handbook of Situated Cognition*. P. Robbins and M. Aydede, eds. Cambridge University Press.

Becker, E. (1975). The Denial of Death. The Free Press.

Kahneman, D. (2011). Thinking, Fast and Slow. Farrar, Straus and Giroux.

Eagleman, D. (2011). Incognito: The Secret Lives of the Brain. Pantheon.

C. elegans: Wikipedia. Accessed December 10, 2015. https://commons.wikimedia.org/wiki/File:Adult\_Caenorhabditis\_elegans.jpg.

Bridgeman quote: "On the Evolution of Consciousness and Language: Target Article on Consciousness." *Psycologuy* 3(15). Accessed December 10, 2015. http://www.cogsci.ecs.soton.ac.uk/cgi/psyc/newpsy?3.15.

Imagining and remembering: Schacter, D. L., D. R. Addis, and R. L. Buckner. (2007).

"Remembering the Past to Imagine the Future: The Prospective Brain." Nature
Reviews Neuroscience 8: 657.

Tulving, E. (2005). "Episodic Memory and Autonoesis: Uniquely Human?" In *The Missing Link in Cognition: Origins of Self-Reflective Consciousness*. H. S. Terrace and J. Metcalfe, eds. Oxford University Press.

## 38. The Babbling Brain

- Mouse memories: de Lavilléon, G., et al. (2015). "Explicit Memory Creation during Sleep Demonstrates a Causal Role of Place Cells in Navigation." *Nature Neuroscience* 18: 493.
- Anesthetized patients: Casali, A. G., et al. (2013). "A Theoretically Based Index of Consciousness Independent of Sensory Processing and Behavior." *Science Translational Medicine* 198RA105.
- Quote from Dante Chialvo: Ouellette, J. (2014). "A Fundamental Theory to Model the Mind." *Quanta Magazine*. Accessed December 10, 2015. https://www.quantamagazine.org/20140403-a-fundamental-theory-to-model-the-mind/.
- fMRI image reconstruction: Nishimoto, S., et al. (2011). "Reconstructing Visual Experiences from Brain Activity Evoked by Natural Movies." Current Biology 21: 1641.
- Capgras delusion: Passer, K. M., and J. K. Warnock. (1991). "Pimozide in the Treatment of Capgras' Syndrome. A Case Report." Psychosomatics 32 (4): 446-48.

## 39. What Thinks?

- Heinlein, R. A. (1966). The Moon Is a Harsh Mistress. G. P. Putnam's Sons.
- Turing, A. (1950). "Computing Machinery and Intelligence." Mind LIX (236): 433-60.
- Searle, J. (1980). "Minds, Brains, and Programs." Behavioral and Brain Sciences 3 (3): 417-57.
- Cole. D. (2004). "The Chinese Room Argument." Stanford Encyclopedia of Philosophy. Stanford University. Accessed December 10, 2015. http://plato.stanford.edu/entries/chinese-room/.
- Removing one neuron: Chalmers, D. (n.d.). "A Computational Foundation for the Study of Cognition." Accessed December 10, 2015. http://consc.net/papers/computation.html.
- Dennett, D. C. (1987). The Intentional Stance. MIT Press.
- Rats: "Rats Dream Path to a Brighter Future." Science Daily. Accessed December 10, 2015. http://www.sciencedaily.com/releases/2015/06/150626083433.htm.
- Leonardo in Breazeal's lab: "Leonardo—Social Cognition." Personal Robots Group. Accessed December 10, 2015. http://robotic.media.mit.edu/portfolio/leonardo-social-cognition/.

## 40. The Hard Problem

- Nagel, T. (2012). Mind and Cosmos: Why the Materialist Neo-Darwinian Conception of Nature Is Almost Certainly False. Oxford University Press.
- Churchland, P. Quoted in Ouellette, J. (2014). Me, Myself, and Why: Searching for the Science of Self. Penguin Books, 256.
- Hankins, P. (2015). The Shadow of Consciousness.
- Jackson, F. (1982). "Epiphenomenal Qualia." Philosophical Quarterly 32: 127-36.
- Jackson, F. (2003). "Mind and Illusion." In *Minds and Persons*, Anthony O'Hear, ed. Cambridge University Press, 251–71.

### 41. Zombies and Stories

Chalmers, D. (1996). The Conscious Mind. Oxford University Press.

Putnam, H. (1975). Mind, Language, and Reality: Philosophical Papers (Vol. 2). Chapter 42. "Are Photons Conscious?" Cambridge University Press.

Chalmers, D. "How Do You Explain Consciousness?" Filmed March 2014. TED Talk 18:37. Posted July 2014. https://www.ted.com/talks/david\_chalmers\_how\_do\_you\_explain\_consciousness.

Fisher, M.P.A. (2015). "Quantum Cognition: The Possibility of Processing with Nuclear Spins in the Brain." *Annals of Physics* 362: 593–602.

Penrose, R. (1989). The Emperor's New Mind: Concerning Computers, Minds, and the Laws of Physics. Oxford University Press.

Aaronson, S. (2013). Quantum Computing Since Democritus. Cambridge University Press.

## 43. What Acts on What?

Fodor, J. (1990). "Making Mind Matter More." In A Theory of Content and Other Essays.

Bradford Book/MIT Press.

## 44. Freedom to Choose

Libet, B. (1985). "Unconscious Cerebral Initiative and the Role of Conscious Will in Voluntary Action." The Behavioral and Brain Sciences 8: 529.

Tumor patient: "Brain Damage, Pedophilia, and the Law—Neuroskeptic." Neuroskeptic. November 23, 2009. Accessed December 10, 2015. http://blogs.discovermagazine.com/neuroskeptic/2009/11/23/brain-damage-pedophilia-and-the-law/.

## 45. Three Billion Heartbeats

Druyan, A. (2003). Skeptical Inquirer 27: 6.

West, G. B., W. H. Woodruff, and J. H. Brown. (2002). "Allometric Scaling of Metabolic Rate from Molecules and Mitochondria to Cells and Mammals." *Proceedings of the National Academy of Sciences* 99 (suppl 1): 2473.

### 46. What Is and What Ought to Be

Hume, D. (2012). A Treatise of Human Nature. Courier Corporation.

Feynman, R. P. (1985). Surely You're Joking, Mr. Feynman! Adventures of a Curious Character. W. W. Norton & Company.

Searle, J. (1964). "How to Derive 'Ought' from 'Is." The Philosophical Review 73: 43.

## 47. Rules and Consequences

Kierkegaard, S. (2013). Kierkegaard's Writings, VI: Fear and Trembling/Repetition (Vol. 6). Princeton University Press.

Greene, J. D., et al. (2001). "An fMRI Investigation of Emotional Engagement in Moral Judgment." Science 293 (5537): 2105.

Brosnan, S. F., and F.B.M. de Waal. (2003). "Monkeys Reject Unequal Pay." Nature 425: 297.

Brosnan, S. F., et al. (2010). "Mechanisms Underlying Responses to Inequitable Outcomes in Chimpanzees, *Pan troglodytes.*" *Animal Behavior* 79: 1229.

Street, S. (2010). "What Is Constructivism in Ethics and Metaethics?" Philosophy Compass 5 (5): 363.

## 48. Constructing Goodness

Wheatley, T., and J. Haidt. (2005). "Hypnotically Induced Disgust Makes Moral Judgments More Severe." *Psychological Science* 16: 780.

Tertullian: "Ante-Nicene Fathers/Volume III/Apologetic/Apology/Chapter XLV."— Wikisource, the Free Online Library. Accessed December 10, 2015. http://en.wikisource.org/wiki/Ante-Nicene\_Fathers/Volume\_III/Apologetic/Apology/Chapter\_XLV.

## 49. Listening to the World

Barnes, J. (2012). A History of the World in 10 1/2 Chapters. Vintage Canada.

Sapolsky, R. M., and L. J. Share. (2004). "A Pacific Culture among Wild Baboons: Its Emergence and Transmission." *PLOS Biology* 2: 0534.

Taylor, S. E., and J. D. Brown. (1988). "Illusion and Well-Being: A Social Psychological Perspective on Mental Health." *Psychological Bulletin* 103 (2): 193.

## 50. Existential Therapy

Camus, A. (1955). The Myth of Sisyphus, and Other Essays. Vintage.