

## Book List for Book Review Essay

**Thomas Kuhn.** *The Structure of Scientific Revolutions*. A seminal work whose influence is everywhere visible today; changed the way we look at scientific discovery, emphasizing the importance of cultural context and introducing the concept of the paradigm into everyday speech.

**Rachel Carson.** *Silent Spring*. 1962. 378 p. (Several subsequent editions) The book that is often credited with starting the modern ecological movement. Carson was a trained biologist and an eloquent writer.

**Lewis Thomas.** *Lives of a Cell: Notes of a Biology Watcher*. 1974.

**Stephen Jay Gould.** Any book.

**John McPhee.** (Almost) any book (check with me, just to make sure).

**Michael Pollan.** *The Botany of Desire: A plant's-eye view of the world*. 2001. 271 p. A delightful meditation in 4 parts—apple, potato, tulip and marijuana—on our role in the evolution of plants.

----. *In Defense of Food: An eater's manifesto*. 2008. 244 p. A science-based argument that culture may be a better guide to eating healthily than science; explains how we are at the same time malnourished and overfed

**Evelyn Fox Keller.** *The Century of the Gene*. 2000. 186 p. An MIT professor argues that the concept of the gene has shaped research in recent decades and suggests limits of that concept. This book is already a classic—it has been translated into many languages, as Barton shows.

**James Watson.** *The Double Helix: a personal account of the discovery of the structure of DNA* approx. 300 p. 1981. A classic, this book is available in a Norton Critical edition, which includes reviews and a bibliography.

**Edward O. Wilson.** *The Future of Life*. 229 p. 2002. Author of *Sociobiology* and *The Ants*; honorary curator at Harvard Museum

**Marcia Bartusiak.** *Einstein's Unfinished Symphony: Listening to the Sounds of Space-Time*. 2000 249 p. Won the 2001 American Institute of Physics Science Writing Award. "A new generation of observatories, now being completed worldwide, will give astronomers not just a new window on the cosmos but a whole new sense with which to explore and experience the heavens above us. . . . These vibrations in space-time--or gravity waves--are the last prediction of Einstein's general theory of relativity yet to be observed directly. They are his unfinished symphony, waiting nearly a century to be heard."

**Timothy Ferris.** *Seeing in the Dark: How Amateur Astronomers Are Discovering the Wonders of the Universe*. 2002. 400 p. From Amazon's website: "a poetic love letter to science and to the skies..."

**Dava Sobel.** *Longitude: The True Story of a Lone Genius Who Solved the Greatest Scientific Problem of His Time*. 1996. 208 p. Surprise best-seller.

---. *A More Perfect Heaven: How Copernicus Revolutionized the Cosmos*. 2011. 288 p. This intriguing recent book is half narrative, half drama.

**Peter L. Galison.** *Einstein's Clocks, Poincaré's Maps: Empires of Time.* 2003. 388 p. "An easy-reading but penetrating book. [Galison] brings the story of time to life as a story of wires and rails, precision maps, and imperial ambitions, as well as a story of physics and philosophy."—*Science*

**Brian Greene.** *The Elegant Universe.* W.W. Norton, 1999. Approx. 400 p. A popular discussion of superstring theory.

**David Lindley.** *Uncertainty: Einstein, Heisenberg, Bohr and the Struggle for the Soul of Science.* 257 pages. Well reviewed.

**Gleick, James.** *Isaac Newton.* 272 p. Well-received biography of the great scientist. (A very good read.—KB)

**Goldsmith, Barbara.** *Obsessive Genius: The Inner World of Marie Curie.* W.W. Norton 2005. "A poignant—and scientifically lucid—portrait" of the first woman to win the Nobel prize (*NY Times* review).

**Brenda Maddox.** *Rosalind Franklin: The Dark Lady of DNA.* 2002. 416 p. Franklin was a physical chemist and photographer whose work allowed Watson and Crick to grasp the double-helical structure of DNA. She was virtually unknown before this well-reviewed biography gave her her due.

**Sylvia Nasar.** *A Beautiful Mind.* 1998. 464 p. Popular biography of Nobel-prize-winning mathematician John Nash, who developed schizophrenia as a young man.

**Robert Kanigel.** *The Man Who Knew Infinity: A life of the genius Ramanujan.* approx. 400 p. 1991. Biography of the Indian mathematician Ramanujan (1887-1920), who was "discovered" by the English mathematician G.H. Hardy and came to England to study. Considered one of the finest books ever written about mathematics.

**Marcus Du Sato.** *The Music of the Primes: Searching to Solve the Greatest Mystery in Mathematics.* 2003. 335 p. Recommended by a friend who's an economist. According to a web review, it's "a wide-ranging historical survey of a large chunk of mathematics with the Riemann Hypothesis acting as a thread tying everything together." (Note: Hardcover and p'back have different subtitles)

**Oliver Sacks.** *Uncle Tungsten: Memories of a chemical boyhood.* 2001. 337 p. Popular and highly readable memoir by one of our most distinctive and prolific researchers in the field of brain disorders.

-----*Musicophilia: Tales of Music and the Brain.* 2007. 381 p. A popular account that combines the latest brain science with the important role music plays in our lives.

**Steven Johnson.** *The Ghost Map.* 2006 299 p. An engaging narrative about one cholera epidemic in London in the 1850s, and how it led to the discovery of the way cholera is contracted. A meditation on the nature of the scientific method, modern cities, and public health works. (A good read! KB)

----. *The Invention of Air: A Story of Science, Faith, Revolution and the Birth of America.* 2009. 254 p. "A look at the classical age of science and the early history of the United States through the work of the remarkable Joseph Priestley" (*NY Times*).

**Neil Shubin.** *Your Inner Fish: A journey into the 3.5-billion-year history of the human body.* 2008. 229 p. A popular account that combines evolutionary theory and human anatomy. "Compelling. . . will change forever how you understand what it means to be human." (Blurb by Oliver Sacks)

**Jerry A. Coyne.** *Why Evolution is True.* 2009. 282 p. "'Evolution is far more than a scientific theory,' argues Coyne; it is a scientific fact.'"—well reviewed in *Boston Globe*.

**Weiner, Jonathan.** *The Beak of the Finch*. 1994. Pulitzer-prize winning account of 1990s researchers in the Galapagos who observed natural selection in real time.

**Carl Zimmer.** *Microcosm: E.Coli and the New Science of Life*. 2008. “A powerful account of the dynamic, complicated and social world we share with this ordinary yet remarkable bug. . . . Exciting, original, and wholly persuasive.” —*New Scientist*

**Atul Gawande.** *Complications: a surgeon's notes on an imperfect science*. 2002. 269 p. Gawande wrote up his experiences and observations as a young surgeon in training in a series of articles, some of which originally appeared in the *New Yorker*. He is especially compelling on the way surgeons respond to and learn from errors.

---. *Better: A surgeon's notes on performance*. 2007. Some of these essays originally appeared in the *New England Journal of Medicine* or the *New Yorker*. Another best-seller from Gawande, “by turns inspiring and unsettling” according to one reviewer.

**Henry Petroski.** *Invention by Design: How Engineers Get from Thought to Thing*. 242 p. “Case studies of engineers who, by dint of ingenuity and persistence, have created important new structures or devices. Whether designing something as small as a pencil or as large as the World Trade Center, successful engineers must not only devise new technology but also find a way to situate that technology within the existing economic, social, and ecological order.”

---. *Remaking the World: Adventures in Engineering*. 256 p. A collection of magazine essays covering such topics as the Panama Canal, the Ferris Wheel, and the Hoover Dam.

**Samuel C. Florman.** *The Existential Pleasures of Engineering*. 1996. 224 p. This popular book explores how engineers think about their profession. “Gracefully written . . . refreshing and highly infectious enthusiasm . . . imaginatively engineered.”—*New York Times Book Review*

**Alexandra Horowitz.** *Inside of a Dog: What dogs see, smell, and know*. 2009. 359 p. Best-seller.

**Bill McKibben.** *The End of Nature*. 1989. 226 p. A classic, influential book by one of the godfathers of the contemporary environmental movement.

-----. *Eaarth*. 2010. 253 p. The extra “a” is intentional—to McKibben it signifies that our planet is forever changed. A polemic against man-made climate change and environmental degradation.

**Julian Anthony (Tony) Koslow.** *The Silent Deep: The discovery, ecology and conservation of the deep sea*. 2007. 270 p. Overview of deep sea ecology from a practitioner; very well reviewed.

#### **February 2013: Some new additions**

**Jacques Pepin.** *The Origin of AIDS*. Cambridge UP, 2011. 293 p.

**Walter Lewin and Warren Goldstein.** *For the Love of Physics: From the end of the rainbow to the edge of time—a journey through the wonders of physics*. Free Press 2011. 302 p.

**Richard Fortey.** *Horseshoe Crabs and Velvet Worms: The Story of the Animals and Plants That Time Has Left Behind*. Knopf. 332 p.

**David Mindell.** *Digital Apollo: Human and Machine in Spaceflight*. MIT Press. 2008. 2011 paperback. 359 p. Also available online via Barton.

**Daniel J. Levitin.** *This Is your Brain on Music: The Science of a Human Obsession*. Dutton, 2006. 314 p.

**Ian Stewart.** *Visions of Infinity: The Great Mathematical Problems.* Basic Books, 2013. 352 p.

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