

scientific stations, and difficult to approach by vessel. This is where gigantic glaciers empty into the Pacific Ocean, and studies have revealed rapid changes in the ice flow. Helen Fricker, a glaciologist at the Scripps Institution of Oceanography in La Jolla, California, has traced these changes to subglacial lakes linked by canals, which form a dynamic hydrologic system on which the ice slides to the sea. Walker journeys across the inhospitable glaciers, where she stands on ice flows the size of Niagara Falls with George Denton of the University of Maine in Orono, a veteran in 'reading' glacial landscapes.

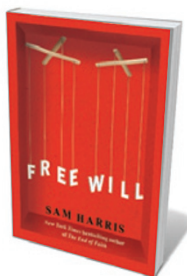
Some of the historical vignettes will be familiar, such as the race to the South Pole between Norwegian explorer Roald Amundsen and his trained team, and Robert Scott, British hero of scientists, who presumably found Amundsen's efficient approach ungentlemanly. Other stories are less well known, such as that of Australian geologist Douglas Mawson, who travelled to the south magnetic pole as part of Ernest Shackleton's Nimrod expedition and later led a disastrous research trip to Adelie Land, on which two men died.

Tales of those expeditions, and the scientific ones that followed, remind us that people have been travelling to Antarctica for almost two centuries, ever since seal hunter Captain John Davis first set foot there in 1821. The Antarctic Treaty, signed by 49 countries, has since 1961 guaranteed that the continent is reserved for science. High technology has now arrived: the collaborations behind the South Pole Telescope and the IceCube Neutrino Observatory have constructed the kinds of instrument that are more routinely built at laboratories such as Fermilab near Batavia, Illinois, or CERN near Geneva, Switzerland. IceCube collects a few hundred neutrinos per day, some with energies that exceed those at earthbound accelerators by more than two orders of magnitude.

Yet Antarctica is still the "world's most mysterious continent", as it remains the only one on which humans have never lived permanently. Walker captures that mystique through interviews with people who have made Antarctica part of their lives. Perhaps the most notable among them are the "telescope nannies", who return each year in early February to spend the long Antarctic winters at the South Pole, taking care of the scientific equipment and data acquisition after scientists have boarded the last planes back to their universities. Their arduous job brings a rare reward: a sense of the untrammelled isolation of this vast continent. ■

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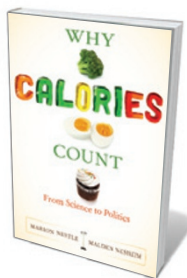
## Books in brief



### Free Will

Sam Harris FREE PRESS 96 pp. \$9.99 (2012)

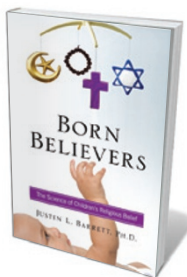
Neuroscientist Sam Harris, the author of the bestselling *The Moral Landscape* (2010), here skewers the concept of free will — that mainstay of law, policy and politics — in fewer than 100 pages. Using evidence drawn from psychology and neuroscience, Harris asserts that the course of human life is all down to luck, and that willpower is a "biological phenomenon". We are not in charge of our own minds, he says: thought and intention simply arise. This is a tract that is sure to boldly go straight to the heart of the determinism debate.



### Why Calories Count: From Science to Politics

Marion Nestle and Malden Nesheim UNIVERSITY OF CALIFORNIA PRESS 304 pp. \$19.95 (2012)

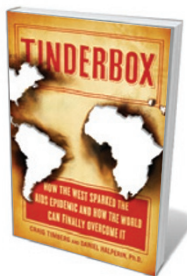
Obesity has gone global — as has misinformation about nutrition and food. Nutrition scientists Marion Nestle and Malden Nesheim unscramble the confusion with a serving of science. They reveal how calories — those potent but ill-understood measures of heat energy — are really counted, why we need them, how we use them, how many we actually need and why it all sometimes goes so wrong. From 'secret' calories to food politics, malnourishment and calorie restriction for health, this is a feast for the mind.



### Born Believers: The Science of Children's Religious Belief

Justin L. Barrett FREE PRESS 320 pp. \$26.00 (2012)

Psychologist Justin Barrett says that belief is rooted not in indoctrination, but in a default setting of the infant brain. A range of findings in developmental psychology, he argues, support the theory: very young children, for instance, are aware that nature is not designed by humans; and people tend to look for unseen agents behind natural phenomena. Barrett says that the evidence points to a universal "natural religion" — but he also argues that parents must not impose belief systems on their children, and should leave the question of whether to die a believer up to their offspring.



### Tinderbox: How the West Sparked the AIDS Epidemic and How the World Can Finally Overcome It

Daniel Halperin and Craig Timberg PENGUIN 432 pp. \$29.95 (2012)

The butchering of a chimpanzee in Cameroon about a century ago may have been when simian immunodeficiency virus crossed into humans and became HIV. But, argue epidemiologist Daniel Halperin and journalist Craig Timberg, European greed and technologies sparked the HIV pandemic. Trade routes, the growth of colonial cities, a decrease in male circumcision and a rise in prostitution effectively incubated and spread the disease — and Western programmes to curb it in Africa have proved mostly ineffectual, say the authors.



### Digitized: The Science of Computers and How it Shapes Our World

Peter J. Bentley OXFORD UNIVERSITY PRESS 256 pp. £16.99 (2012)

The wiring of the world — from a glint in Alan Turing's eye to global domination — is neatly encapsulated by computer scientist Peter Bentley. An enthusiastic guide, he lays this compelling history bare, explaining the science as he goes: Moore's law of processing-power growth, the circuit designs of Claude Shannon, John von Neumann's early electronic digital computer, neural networks and the staggering array of applications for computing in everything from pizza delivery to Alzheimer's-disease research.