

which the edifices again fulfilled ideological roles. In the United States, plutocrats were its main financiers. Their often eccentric buildings were inspired by the exuberant aesthetic of pulp sci-fi magazines. As Firebrace notes, US popular science was “linked to mass entertainment, to adventure, exploration and individual encounters with the unknown”.

Philanthropist banker Charles Hayden is said to have believed that “feeling the immensity of the sky and one’s own littleness” should be accessible to all, although Firebrace dryly points out that sense of size might also depend on socio-economic status. The 1935 planetarium built in New York City in Hayden’s name featured Saturn-shaped light fittings and was crowned with a bronze dome that used soundproofing to create the illusion of isolation in space.

Britain came relatively late to the planetarium party: the iconic London Planetarium opened its doors only in 1958. Built in a style described by Firebrace as “modest and buttoned up”, it was attached to the Madame Tussauds waxworks museum — an uneasy conjunction that seems only slightly less bizarre when one remembers that both were in the business of simulation. (The planetarium ceased functioning as such in 2006.)

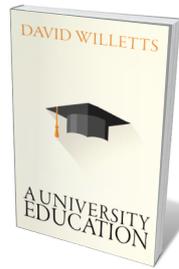
Our era of space telescopes and robotic probes has coincided with a revolution in planetarium technology. Audiences are freed from a fixed vantage point on Earth. They can now fly virtually across the Solar System and beyond by way of a seamless mix of computer-generated and real images provided by digital projection systems at, say, the Adler Planetarium in Chicago, Illinois, or the Peter Harrison Planetarium in Greenwich, London.

Firebrace laments the loss of the old-fashioned shows’ subtlety, but modern space extravaganzas have helped to renew public interest in all things astronomical. Perhaps it is their resemblance to cinema and computer games that has allowed them to prosper, even as museum displays are under pressure to attract younger audiences. And one might argue that the modern planetarium can be a highly effective gateway to a deeper engagement with science.

We now understand that much of the cosmos is invisible, and our methods of investigating it no longer rely entirely on electromagnetic radiation. *Star Theatre* ends by questioning the future role of the planetarium — an experience based on visible light — in a Universe of gravitational waves, dark matter and dark energy. But it seems unlikely that the winning mix of drama, technology, design and science will go out of fashion any time soon. As Firebrace concludes: “The heavens are as full of light as ever.” ■

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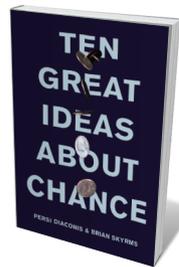
Books in brief



A University Education

David Willetts OXFORD UNIVERSITY PRESS (2017)

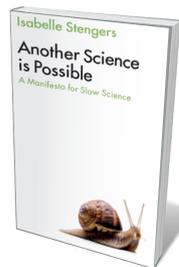
Worldwide, universities numbered just 500 after the Second World War; the tally is now 10,000. The most venerable handful are, like California redwoods, “deep-rooted, long-lived, and with the power to shape an entire eco-system around them”. So declares David Willetts in this magisterial study of the institution. In it, Willetts, UK minister for universities and science from 2010 to 2014, explores the landscapes of research, scholarship and innovation; parses the intricacies of policy; dives into the vexed question of fees; and gives related topics, from globalization to “edtech”, their due.



Ten Great Ideas about Chance

Persi Diaconis and Brian Skyrms PRINCETON UNIVERSITY PRESS (2017)

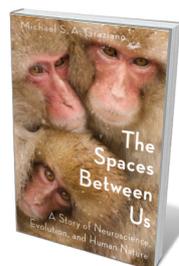
What are the odds that the Sun will ‘rise’ again tomorrow? Just because the phenomenon happens every day, can we be sure it will again? And, most importantly, can we quantify our confidence in that prediction? In ten engaging, profound and occasionally dense chapters, mathematician Persi Diaconis and logician Brian Skyrms review pivotal points in the history of probability and statistics, unified by a central thread: the practical and philosophical pitfalls that lie in the very definition of chance. A volume that should be on every scientist’s reading list.



Another Science Is Possible: A Manifesto for Slow Science

Isabelle Stengers (translated by Stephen Muecke) POLITY (2017)

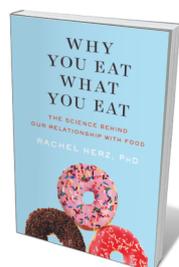
Sloppy, conformist, opportunistic and in thrall to a boom-and-bust economy: a worrying proportion of research, argues philosopher of science Isabelle Stengers, is little better than a rush job. Stengers calls for scientists to remember that science is tightly twined with social concerns, and cannot vanquish global issues at speed, or alone. Further, she argues that researchers need to participate in “public intelligence”: honest, coherent communication with a scientifically clued-up populace. Although convoluted at times, Stengers’s slow-science manifesto is timely, trenchant and thoughtful.



The Spaces Between Us

Michael Graziano OXFORD UNIVERSITY PRESS (2018)

We walk through life in a bubble, asserts neuroscientist Michael Graziano. This personal buffer zone is “constantly switched on like a force field” and monitored by networks of ‘peripersonal’ neurons. Graziano’s detailed study splices early work on the phenomenon (such as the ‘escape zone’ of fleeing prey) into accounts of research, including his own, that is now sketching in relevant brain machinery. Finally, he explores psychosocial aspects and, in a devastating coda, reveals how dyspraxia compromises the ability to decode peripersonal space, with potentially explosive social consequences.



Why You Eat What You Eat

Rachel Herz W. W. NORTON (2017)

In this factual feast, neuroscientist Rachel Herz probes humanity’s fiendishly complex relationship with food from the inside out. We learn that a fetus detects aromatic compounds from food its mother eats, paving the way for preference; that we eat less of snacks served in red dishes; and that olive oil’s aroma may help to control weight. Herz also reveals how, on US election night 2016, a surge in deliveries of ‘comfort’ foods such as pizza hit New York and other stricken pro-Hillary Clinton cities. An intimate look at food on the brain. **Barbara Kiser**