

of structure-formation theory and progress on unravelling galaxy formation. Gott's major protagonists (including James Gunn, Jeremiah Ostriker and James Peebles) did make key discoveries, but in the context of a broader group than Gott describes. Gott also gives only a partial account of the creation and development of a key contemporary effort: work on large-scale structure and mapping of the cosmic web by the Sloan Digital Sky Survey (SDSS) — which uses the optical telescope at Apache Point Observatory, New Mexico — to create the most detailed 3D maps of the Universe yet, and continues to map further regions and earlier times.

Gott's is a personal view of cosmological developments, giving space and life to realities of research. This evokes the best of physicist and science historian Abraham Pais's more comprehensive books, such as *Inward Bound* (Clarendon/Oxford Univ. Press, 1988). Unafraid of spending a page explaining an idea that turns out to be wrong, Gott engagingly describes the blind alleys along the way to current views. He presents figures and equations stripped to their fundamental forms, but avoids the common temptation to water them down unrecognizably.

His work shines with this approach. As 3D maps of the Universe emerged from the 1980s onwards, revealed by surveys such as the SDSS and its forerunners, and as the theoretical picture of cosmology developed,

**“Gott's is a personal view of cosmological developments, giving space and life to realities of research.”**

it became clear that the pattern of density fluctuations in the Universe is a cosmic, topologically sponge-like web. Gott's youthful work had primed him to grasp this, and gave him the

mathematical tools to test it. This aspect of cosmology is now an essential facet of our knowledge, and our fullest understanding of the topology of large-scale structure is derived from techniques that Gott developed.

Gott's journey shows how scientists can be so motivated by their earliest obsessions that they persist in pursuing them — and how unique obsessions can let them bring something new to the crowded table of ideas. For working scientists, this book is a reminder of what drives us, the value of chasing down questions that only we would ask, and how circuitous that chase can be. *The Cosmic Web* is not just a well-told story about the frontiers of cosmological knowledge. It is also an inspiration to explore them further. ■

**Michael Blanton** is an associate professor in the Center for Cosmology and Particle Physics at New York University, and is director of the Sloan Digital Sky Survey IV. e-mail: michael.blanton@gmail.com

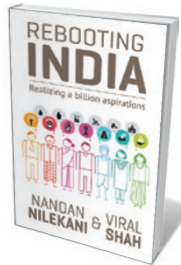
## Books in brief



### In a Different Key: The Story of Autism

John Donovan and Caren Zucker CROWN (2016)

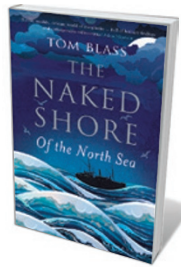
Hot on the heels of Steve Silberman's *Neurotribes* (Avery, 2015; see *Nature* **524**, 288–289; 2015) comes another monumental history of autism. Journalists John Donovan and Caren Zucker (whose television series *Echoes of Autism* broke ground in the 2000s) trace the halting progress in understanding the condition, weaving in stories of, among others, Donald Triplett, the first person diagnosed as autistic; US medic Leo Kanner; and UK psychiatrist Lorna Wing. The scoop is historian Herwig Czech's claim that key player Hans Asperger contributed to Nazi 'social cleansing' of children deemed mentally ill.



### Rebooting India: Realizing a Billion Aspirations

Nandan Nilekani and Viral Shah ALLEN LANE (2016)

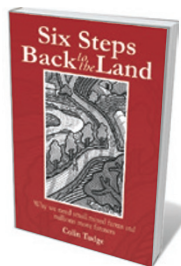
India's telecoms network is the world's second largest, yet the country's rural poor often effectively run marathons in accessing services. In this audacious technological manifesto — now in a UK edition — entrepreneur Nandan Nilekani and software specialist Viral Shah argue that India's vast challenges in banking, health care and other systems are solvable, if approached like government start-ups run by handpicked entrepreneurs. Nilekani and Shah cite the e-Aadhaar biometrics identification card, open to all Indians, as a first step on the road to digitally streamlined governance and society.



### The Naked Shore: Of the North Sea

Tom Blass BLOOMSBURY (2016)

Compared to the charismatic Mediterranean, Europe's North Sea can seem a workaday tract of "mists, miasmas and surliness", notes journalist Tom Blass. But in trawling its depths for this vivid travelogue, Blass dredges up nuggets from an eventful cultural, military, industrial, economic and ancient history. Launching from the estuarine murk of the Thames, he takes in Dutch polders (tracts of land dubbed 'waking', 'sleeping' or 'dreaming', depending on distance from the sea), Frisian dialects, fishing fracas, puffins, porpoises and a future of warming waters and giant wind farms.



### Six Steps Back to the Land: Why We Need Small Mixed Farms and Millions More Farmers

Colin Tudge GREEN (2016)

The much-chewed-over conundrum of how to feed a projected global population of 10 billion demands an agrarian renaissance led by scientifically run, small, mixed farms, avers biologist Colin Tudge. Using principles such as agro-ecology and a focus on "lots of plants, not much meat, and maximum variety", Tudge's transformative prescription is fresh, pragmatic and packed with cutting-edge science. It is impressive, too, for its sound circular-economy thinking, not least an emphasis on an informed food culture.



### The Wheel: Inventions and Reinventions

Richard W. Bulliet COLUMBIA UNIVERSITY PRESS (2016)

As innovations go, the wheel might seem the ubiquitous driver of cultural evolution. But Richard Bulliet's technological history reveals complexities. The wheel was invented 3 times (with fixed and moving wheels on axles both emerging 5,000 years ago, and casters a mere 300); defined differently by the rail and automobile industries; and eschewed by civilizations such as the pre-Columbian Olmecs. Hitched in turn to rickshaws, ox carts, Mongolian mobile homes, barouches and bicycles, this is a deft narrative. **Barbara Kiser**