

change the face of biology. He dwells at length on what might account for this failure. Astbury had become depressed and embittered as he saw others in London and Cambridge win funding that he had failed to secure. He had conceded the DNA problem to Wilkins at King's. He may not have kept up with the theory of X-ray diffraction. Finally, Hall suggests, Astbury probably saw DNAs apparently fixed structure as uninteresting compared to the conformational changes in proteins; at the time, his main interest (and the subject of Beighton's thesis) was bacterial flagella.

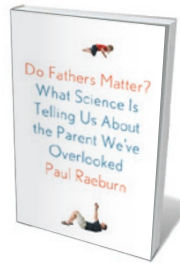
Hall indulges in some counterfactual speculation. What if Astbury had shown Beighton's pictures to the US chemist — and later Nobel laureate — Linus Pauling, who stayed with Astbury in Leeds in 1952? Pauling might have seen their significance and realized Watson and Crick's worst fears by beating them to the structure. But it didn't happen, and Watson's 1968 book credits Astbury only with the “one half-good photograph” taken by Bell in 1938.

Hall tells his story with style and pace. But I am unconvinced by his central contention, that Astbury was a “titan” and the founder of molecular biology. Astbury was one of many who independently promoted a molecular approach to understanding living things. Success in science depends as much on personality as on intellect, and here Hall leaves us largely in the dark. Clearly Astbury was a larger-than-life figure, a good communicator and entertaining in company (if you liked “off-colour jokes”), yet not favoured by the scientific establishment. Crystallography pioneer Dorothy Hodgkin (who taught chemistry to Astbury's daughter Maureen at the University of Oxford, UK — a connection not mentioned by Hall) once described him affectionately as “very bad and very amusing”.

And the monkeynut coat? Astbury worked with the now defunct UK company Imperial Chemical Industries to develop fibres made from a protein derived from peanuts, and proudly wore a coat made from 'Ardil'. It proved to be no cheaper and considerably less hard-wearing than wool, and never took off. Hall uses this story to launch a final chapter exploring Astbury's prescient reflections on the manipulation of biological materials for utilitarian ends. He did not live to see the age of biotechnology, but he was certainly one of its prophets. ■

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Books in brief



Do Fathers Matter?: What Science Is Telling Us About the Parent We've Overlooked

Paul Raeburn FARRAR, STRAUS & GIROUX (2014)

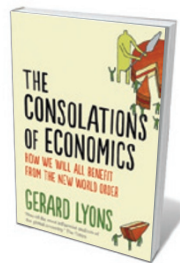
When science journalist Paul Raeburn first assessed the available research on fathers, he found the pickings decidedly slim. Scientists are now redressing the balance, and Raeburn has rounded up key findings in developmental psychology, evolutionary biology, genetics and neuroscience. Prepare for a bracing walk through the myriad ways fathers matter, from the “genomic battle of the sexes” that can lead to differing syndromes in offspring, to a father's ‘destabilizing’ — and hence stimulating and educative — play with his children.



The Island of Knowledge: The Limits of Science and the Search for Meaning

Marcelo Gleiser BASIC BOOKS (2014)

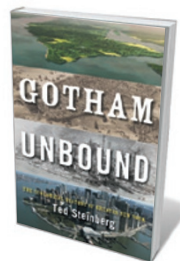
Among the bright knowns of science are countless unknowns, untouched by the most exquisitely calibrated, powerful instruments yet invented. Physicist Marcelo Gleiser sets out to explore the extent to which we can make sense of reality. He maps humanity's “island of knowledge” from pre-Socratic cosmology to quantum mechanics. And he marks how mysteries proliferate with each finding — a perpetual blur in our cosmic view that, like mathematician Kurt Gödel's work on incompleteness, spurs scientific creativity.



The Consolations of Economics: How We Will All Benefit from the New World Order

Gerard Lyons FABER AND FABER (2014)

The economic conflagration of 2008 inspired plenty of bravura ideas on how to fireproof the future. Economist Gerard Lyons, who saw it all coming, offers a gloom-free reading of causes and correctives, and predicts global growth led by multiple economies. Drawing on key case studies and long experience with China, he examines world economic drivers, ‘soft’ and ‘hard’ power (a country's influence exerted through cultural appeal, or by military or economic means), and the economic goals and strategies that foster global stability.



Gotham Unbound: The Ecological History of Greater New York

Ted Steinberg SIMON & SCHUSTER (2014)

How did Mannahatta, a wild expanse of hills and mudflats on North America's Atlantic coast, become the high-density, concrete-coated city of New York? Ted Steinberg's environmental history traces the stages from Henry Hudson's 1609 discovery of a “drowned estuary” to the ravages of Hurricane Sandy in 2012. Centuries of extreme land-use changes — reclaiming underwater terrain, levelling hills, draining lakes and crafting ersatz terra firma from landfill — have created an ecologically scarred city vulnerable to further storms. Other coastal megacities should take heed.



Human Evolution: A Pelican Introduction

Robin Dunbar PELICAN BOOKS (2014)

The British Academy's ‘Lucy to Language’ project has spawned major sociobiological findings, most recently aired in *Thinking Big* by Robin Dunbar, Clive Gamble and John Gowlett (see *Nature* 509, 284–285; 2014). Dunbar draws on that research — in particular the social-brain hypothesis and time-budget models — for this solid primer on human evolution under the relaunched Pelican imprint. On the journey from the australopithecines to the Neolithic and what followed, Dunbar is an accomplished guide. [Barbara Kiser](#)