

The book may also suffer from a kind of sampling bias. The families the authors saw most were those trapped in the most difficult situations — of either medical uncertainty or medical danger. They saw less of families for whom the screening was beneficial, particularly those whose children were diagnosed with a condition already in the screening programme before 2005. So the picture may be unduly gloomy. Finally, more discussion of how newborn screening is (or is not) done outside the United States would have contextualized this California-based study.

The book does highlight some broader problems about scholarly work in this area. The first is its audience. Although, happily, the book is largely jargon-free, readers without much genetic knowledge may struggle to follow the valuable information for shaping screening policy, or be frustrated by the medical-sociology focus on observation rather than an assessment of alternative policies. Good policy will require input from many disciplines. All of us, from whatever discipline, need to work hard to make our findings useful to others.

The second problem is time. After the 2005 adoption of expanded screening in California, the authors studied families from November 2007 through to July 2010. The book will be read in 2013. That time lag was largely unavoidable, but by the time the programme can be assessed, it and its settings are no longer the same. The screening programme itself has already changed our understanding of some of the conditions in ways that undercut some of the authors' findings. Meanwhile, the US health-care system is in the process of transformation.

And newer challenges are at hand. Today, whole-exome and whole-genome sequencing are being used clinically, often for children with conditions as poorly understood as those described here. With the plunging cost of sequencing, I think newborn sequence screening will not be far behind. And the challenges will not wait for a baby's birth. In the United States and elsewhere, several companies are already using sequencing technologies for prenatal testing for aneuploidies (disorders in which the fetus has the wrong number of chromosomes) using a simple maternal blood draw within the first trimester; wider applications are surely coming.

How can we implement and assess new technologies competently when the world is changing too fast for the assessors? That, to me, is the most disturbing question raised by this excellent book. ■

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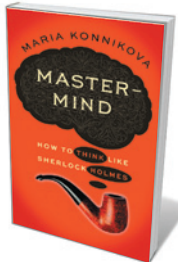
Books in brief



The Artful Species: Aesthetics, Art, and Evolution

Stephen Davies OXFORD UNIV. PRESS 320 pp. £25 (2012)

This spare and elegant treatise by philosopher of aesthetics Stephen Davies posits that art is part of human nature, and is tied in a number of ways to human evolution. Moreover, he argues, the evidence could stretch back at least 400,000 years — to a blood-red quartzite hand axe dubbed Excalibur by the archaeologists who dug it up. Davies marshals findings in disciplines ranging from neuroscience, ethology and evolutionary biology to the arts, musicology and literature. Ultimately, he says, our artistic behaviour is both “puzzling and magnificent”, as we shoulder the heavy costs with perennial zeal.



Mastermind: How to Think Like Sherlock Holmes

Maria Konnikova VIKING 288 pp. \$26.95 (2013)

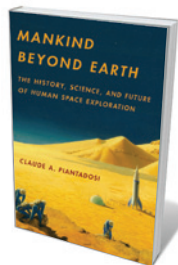
Devotees of Arthur Conan Doyle's conundrum-cracker will be thrilled by this portmanteau of strategies for sharpening cognitive ability. *Scientific American* columnist Maria Konnikova mixes psychology and neuroscience with Holmesian technique and insights on everything from information storage (Holmes's 'brain attic') to observation, awareness and razor-sharp deduction. A few hours in Konnikova's company and, along with Holmes, you might intone, “give me the most abstruse cryptogram or the most intricate analysis, and I am in my own proper atmosphere” (*The Sign of Four*, 1890).



The Fragile Wisdom: An Evolutionary View on Women's Biology and Health

Grazyna Jasienska HARVARD UNIV. PRESS 298 pp. £25.95 (2013)

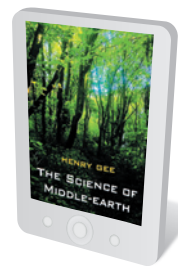
Women may aim for perfect health through diet, exercise and close attention to medical advice, but still develop breast cancer or osteoporosis. Reproductive fitness often wars with general physical fitness over a woman's lifetime, argues public-health specialist Grazyna Jasienska. Drawing on a raft of research in evolutionary biology and beyond, she points to factors such as the disjunction between 'palaeo' and current lifestyles, hormonal disparities and longer lifespans as key to informing disease-prevention strategies.



Mankind Beyond Earth: The History, Science, and Future of Human Space Exploration

Claude A. Piantadosi COLUMBIA UNIV. PRESS 336 pp. \$35 (2013)

Despite difficulties such as cosmic radiation, huge distances, near-vacuum conditions and zero gravity, manned space flight still ignites the imaginations of millions. Medical doctor Claude Piantadosi fans the flames by boldly going into the past and possible future of US space exploration. This is a chronicle at warp speed, covering the science of space exploration; robots, spacecraft and the International Space Station; NASA's glory years; and the constraints on kick-starting 'cheap' space transportation.



The Science of Middle-earth

Henry Gee JILL GRINBERG LITERARY MANAGEMENT Available for Kindle only \$4.99 (2012)

Repeat immersions in Middle-earth beckon again as Peter Jackson's first instalment of *The Hobbit* trilogy, *An Unexpected Journey*, opens in cinemas. *Nature* senior editor Henry Gee offers a revised and reissued guide to the science in J. R. R. Tolkien's fictional world. This is a completist's feast, from the glow of Bilbo's Elvish blade Sting (possibly the result of a chemical sensor “specifically tuned to Orkish exhalations”) to the aerodynamic unfeasibility of a Balrog's wings.