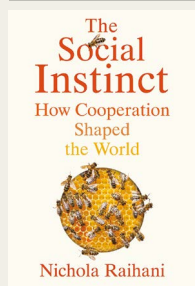


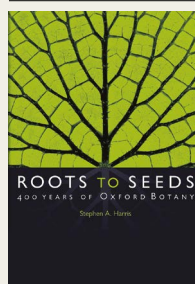
Books in brief



The Social Instinct

Nichola Raihani *Jonathan Cape* (2021)

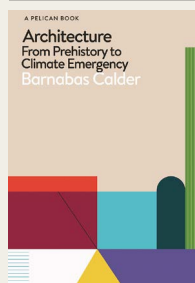
Cooperation is a double-edged sword. Within totalitarian nations and between democratic ones, it dominated the Second World War. But working together also created a post-war consensus that paved the way for the UK National Health Service and gender equality. If used well, cooperation delivers riches, but “in the wrong hands or used in the wrong ways”, it brings ruin, observes psychologist Nichola Raihani. Her rewarding analysis ranges from genetics to politics, and from the individual to the international, including the COVID-19 pandemic.



Roots to Seeds

Stephen A. Harris *Bodleian Library Publishing* (2021)

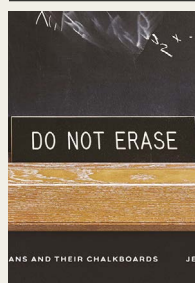
The University of Oxford’s botanical garden was founded in 1621 as the Physic Garden, to support medical training. Early plants included the mandrake, with a homunculus-like root thought to emit a lethal shriek if pulled up, notes plant scientist Stephen Harris. His history of the garden, accompanying a Bodleian Library exhibition, displays diverse illustrations and portraits. Authoritative and gorgeous, it is also honest: “Oxford’s success at both the generation of botanical knowledge and its dispersal over four centuries has been very patchy.”



Architecture

Barnabas Calder *Pelican* (2021)

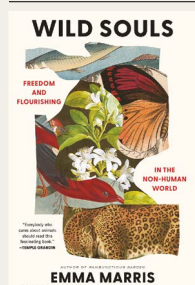
Constructing and running buildings produces 39% of global human greenhouse-gas emissions, notes historian Barnabas Calder in his powerful, disturbing account of architecture and energy since ancient times. Construction of Egypt’s Great Pyramid of Giza used less energy than is consumed over the lifetimes of seven average modern US residents; stone has a strength-to-carbon-footprint ratio 25 times better than concrete’s. Calder argues that architecture must end its reliance on fossil fuels by learning from the past, including ancient Rome.



Do Not Erase

Jessica Wynne *Princeton Univ. Press* (2021)

A blackboard filled with mathematics by Albert Einstein takes pride of place in a museum in Oxford, UK. Ironically, Einstein opposed its preservation — unlike 111 mathematicians whose hugely varying chalkboards feature in photographs by Jessica Wynne. The simplest, by Tadashi Tokieda, shows a white circle outlined against black, labelled ‘WHITE’; a second circle, filled with white, is labelled ‘BLACK’. Tokieda compares watching a board being chalked with listening to music “note by note”. This is an original, elegant, if baffling book.



Wild Souls

Emma Marris *Bloomsbury* (2021)

Environment writer Emma Marris begins her colourful study of wild animal–human interactions with a helicopter ride to a sanctuary in Hawaii. There, conservationists are trying to save eight bird species threatened by human influences, including mosquito-borne viruses brought in by ship in 1826. She also considers Australian bilbies, Peruvian monkeys and wolves reintroduced to Oregon. “Ecosystems are built on death”, she muses, so which ‘wild’ animals should be preserved, and which allowed to die? **Andrew Robinson**

comes with a dash of culture clash between the small, nimble academic lab and the corporate behemoth. This collaboration, as well as one with the Serum Institute of India in Pune, and an early insistence on minimizing the price and making the vaccine available to the world, have helped to ensure that Gilbert and Green’s early gambles have global impact.

There are details about some of the more frustrating moments in the Oxford–AstraZeneca vaccine’s development. This includes an explanation of why some clinical-trial participants received different amounts of vaccine, and waited for different lengths of time between doses. Both of these incidents complicated interpretation of study results.

Other key moments get less attention. There is no reference to South Africa’s February decision not to use its doses of the Oxford–AstraZeneca vaccine, because the jab failed to prevent infections with the Beta variant of SARS-CoV-2 sweeping the region. And safety concerns over an extremely rare but potentially deadly blood-clotting disorder that might be associated with the vaccine are mentioned only briefly. Yet the resulting fears and roll-out pauses threw a huge spanner in the works.

Hidden heroes

Still, the book highlights the under-sung research behind vaccines, and the need to promote it. The authors repeatedly emphasize how development was accelerated not by skipping safety steps, but by taking financial risks, such as running various testing stages concurrently. Developers must usually ensure that one step is successful before moving to the next.

Throughout, food metaphors make the people and science relatable. The first viral cultures are like a sourdough starter; the conventional process of getting a lab result, then applying for funding for the next step, is like having to make a separate run to the shops for each ingredient in a roast dinner. The biggest mystery, ultimately, is how the authors found time to write the book in the middle of it all.

Although the chronology of events and science sometimes get jumbled — readers are given a detailed explanation of the chewy “replication-deficient recombinant simian adenoviral-vectored vaccine” well before they are introduced to the basics of how vaccines work — Green and Gilbert lay everything out clearly, from molecular biology to clinical-trial design. There is even a handy appendix listing the ingredients of the vaccine and what each does.

It would be wonderful if that were enough to quell the sort of concerns Green heard at the campsite. Sadly, it is hard to imagine that even her down-to-earth charm can compete with the flood of anti-vaccine propaganda that fills social-media feeds. Even so, it is worth a try.

Heidi Ledford is a senior reporter for *Nature* in London.