

▶ ancestral identity among African Americans. In his 1845 *Narrative of the Life of Frederick Douglass*, the eponymous, formerly enslaved abolitionist and statesman exemplified the quest for that identity, writing: “A want of information concerning my own was a source of unhappiness to me even during childhood.”

The inability of African Americans to access their original names, language, tribe and clan affiliations or regional origins in Africa has left wounds in the psyches of many, and has made ancestry reconstruction a high priority. The intentional destruction of families during slavery contributes to the damage, and to the complexity of the search. Finding relatives separated by enslavement was usually a person’s first task after emancipation; often full reunification was impossible.

In the United States, identity is disproportionately linked to phenotype, and in ethnic-minority groups is associated with levels of self-confidence, performance, and overall positive life outcomes and behaviours. Commercial purveyors of ‘direct-to-consumer’ genetic-ancestry testing have identified a vulnerable and accessible market in many African Americans. Unfortunately, the results fall



Researchers at Howard University extract DNA from samples.

decidedly short of the marketing hype. Many scientists deem these tests and their interpreted results ‘recreational genetics’; they are not peer-reviewed, and work with unknown reference databases. Companies have sequestered information from public databases to build their own proprietary databases, which are inaccessible to scientific scrutiny.

Today, a perfect storm rages at the nexus of commercial opportunism (targeting, moreover, a socio-economically disadvantaged

group), biomedical and technological inadequacy, historical naivety and the scars of the institutionalized loss of ancestral ties. How will inaccurate and inadequate genetic-ancestry information be reconciled with the promise of personalized, precision medicine when the latter depends on accurate and comprehensive genetic ancestry data? Perhaps this will be the topic of another sociological study.

The Social Life of DNA is a lucid, if insufficiently critical, chronicle of the sociocultural maturation of a population as its individuals use new resources to recognize and develop an expanded set of identities. The book will date quickly because this process, and the science undergirding it, is dynamic. Still, it is an admirable first

effort to explore the initial implications of genetic root-seeking among people of African descent, with much room left for adding a necessary, in-depth biological perspective on the topic. ■

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F. L. C. JACKSON

MULTIDISCIPLINARITY

Collaborative to the core

Rick Rylance applauds a study on the lean new model for research teamwork.

The management of research processes and systems has evolved significantly over the past few decades. There has been, for instance, an erosion of the distinction between ‘pure’ and ‘applied’ work, conceptually and in practice. And there has been a rise in collaborative relationships, both between universities and between universities and other agencies such as businesses, public-sector institutions and charities. This process is becoming increasingly international.

In *The New ABCs of Research*, Ben Shneiderman examines the causes of these changes. Some will be familiar. Interdisciplinary work encourages diverse partnerships, and electronic communications enable rapid interaction and dissemination. Research teams are replacing what Shneiderman calls the myth of the lone researcher. The pursuit of both commercial advantage and public benefit are stimulating collaboration; data and resources are being pooled; and governments are supporting international research cooperation for diplomacy and trade. Shneiderman,

a specialist in information technology and information systems, delivers a shrewd and timely account of these developments.

He champions collaboration, teamwork and practice-based research. The book intends to serve as a guidebook for “students and junior researchers” and as a “manifesto for change, particularly for senior researchers and policymakers”. There is some tension between these aims. But his argument is coherent: senior scientists and policymakers do need to adapt the present to assist the future, and the generation now being trained, or starting their careers, will carry the torch. Shneiderman has stimulating thoughts on



The New ABCs of Research: Achieving Breakthrough Collaborations
BEN SHNEIDERMAN
Oxford University Press: 2016.

project-based teaching at the undergraduate level and advice for early-career researchers on winning grants, publication and effective writing. All this is hands-on and helpful, and one wishes it had been said more loudly in the past. But his proposals for policymakers do not extend much beyond exhortation.

The core principles of *The New ABCs of Research* are delivered in two recurrent acronyms. The ABC of the title stands for “applied and basic combined”, whereas SED is “science, engineering, and design”. The latter, Shneiderman argues, can deliver the former (which also stands for, in the book’s subtitle, “Achieving Breakthrough Collaborations”, Shneiderman’s stated ambition).

Of the three SED elements, Shneiderman is unadventurous on science and engineering; on design he is more stimulating. Drawing on contemporary theories of “design thinking”, he notes that design is not a matter of efficiency or refinement, but rather a “human-centered process” essential for the discovery of meaning and function. He sees it as imbued

with the empathy necessary for identifying human needs, “which are then distilled into an actionable clarification of the problem”. Shneiderman is ambitious, envisioning collaboration between designers, scientists and engineers to tackle globally important issues.

The book is strongest in the areas in which Shneiderman is most enthused, such as the advantages of teamwork or the concept of prototyping as research in practice, for instance using 3D modelling and computer-assisted virtual design tools. His discussion of the challenges and potential of big data and open access as ways of sharing research findings and approaches to social issues is informed and thoughtful. There is a refreshing pragmatism about his attention to matters such as the business of making a research career. Shneiderman is good on career psychology, and on the scarcity of women at professorial levels in particular. He is especially good on the human dynamics of collaboration. Alongside sensible advice on the dos and don'ts of partnerships and the optimal size and mix of skills in groups, he pays attention to matters such as leadership, status management, brokerage, goal-setting and communication among different personality types.

But *The New ABCs of Research* can be over-schematic and repetitive. Its acronymic principles pop up like alerts on a smartphone. Clichéd metaphors (for example seeds, root and flowers) stand in for descriptions of the dividends of interdisciplinary work or painstaking policy recommendations. Zealotry sometimes erodes the book's gravitas.

Shneiderman provides several case studies, including sketches of ABC-effective research organizations, such as the German Fraunhofer Institutes, or Bell Labs in the United States. Most interestingly, he discusses individuals including Nathan Eagle, founder of Jana, a company that specializes in deploying mobile technologies as local solutions to issues in the developing world, for example to encourage blood donation. But these studies tend to serve not as moments for exploration, but as campaigning examples of ABC in practice. That over-insistence is a touch reminiscent of pop business-studies books for under-confident entrepreneurs.

Like several books of its ilk, I wished it was both longer to substantiate the case, and shorter to get past the too-readily recognizable. But overall, *The New ABCs of Research* deserves a readership for the boldness of its ambition and the promise of its ideas. They deserve debate and implementation. ■

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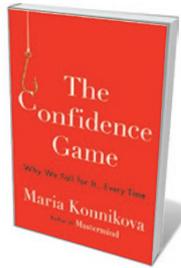
Books in brief



The Shock of the Anthropocene: The Earth, History and Us

Christophe Bonneuil and Jean-Baptiste Fressoz (translated by David Fernbach) VERSO (2016)

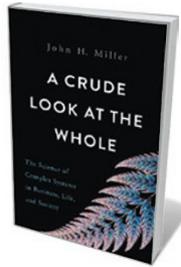
This bold, brilliantly argued history of the Anthropocene epoch is a corrective to cosy thinking about humanity's grave disruptions to Earth systems. Christophe Bonneuil and Jean-Baptiste Fressoz draw on climate science, economics and technological history to reveal how, starting in eighteenth-century France, imperial narratives that saw people and planet as a “totality to be governed” laid the conceptual basis for the crisis. They call for a “new environmental humanities”, and a shift away from market-based approaches that feed the beast.



The Confidence Game: Why We Fall for It... Every Time

Maria Konnikova VIKING (2016)

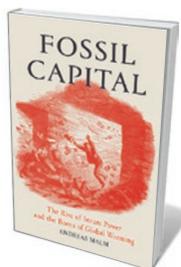
Following her nifty how-to on honing cognitive ability, *Mastermind* (Viking, 2013; see *Nature* **492**, 183; 2012), journalist Maria Konnikova adroitly explicates the surprising psychology behind the confidence game — the modus operandi of charismatic swindlers that thrives in upheavals such as today's technological revolution. She unpacks the con-artist's repertoire of cajolery, illustrating it with case studies (such as art dealer Glafira Rosales's large-scale fraud) and research (including psychologist Paul Ekman's, on lying). A mesmerizing glimpse into the trickster's mind.



A Crude Look at the Whole: The Science of Complex Systems in Business, Life, and Society

John H. Miller BASIC (2016)

Reductionism offers few insights into complexity in nature. So argues computational analyst John Miller in this succinct, elegant study of systems thinking, the newish science examining basic principles, such as emergence, that govern physics, biology and economics. Miller reveals compelling echoes between apparently unrelated phenomena, such as “hivemind” behaviour in bee colonies and consumers, or responses to local stimuli in how a cone snail patterns its shell and how a market functions.



Fossil Capital: The Rise of Steam Power and the Roots of Global Warming

Andreas Malm VERSO (2016)

The birth of the fossil economy, avers human ecologist Andreas Malm, arrived when steam eclipsed water power in mid-nineteenth-century Britain. Around that, Malm builds a deep, insight-packed history of how society came to be in thrall to the twin engines of combustion and capital. We see, for instance, how at the start, steam was simply more expedient, not more efficient, than hydropower; and how now, decoupling from fossil fuels is stymied when energy companies pull out of investment in renewables on the basis of low returns.



One Breath: Freediving, Death, and the Quest to Shatter Human Limits

Adam Skolnick CROWN ARCHETYPE (2016)

Freediving (making deep dives on one breath) has been having a moment since James Nestor's *Deep* surfaced (Houghton Mifflin Harcourt, 2014; see *Nature* **510**, 339; 2014). Here, Adam Skolnick interlaces the science of the sport with the story of US freediver Nicholas Mevoli, who died in competition in 2013. Pulmonary haemorrhages contributed to his death, Skolnick shows, pointing to a need for more research on this radical self-experimentation. [Barbara Kiser](#)