

adroit descriptions of its potential to cure conditions from sickle-cell disease to cystic fibrosis. He delves into how CRISPR could be used to create tastier tomatoes, hardier oranges and hornless cattle, although he could have more deeply explored how it might transform world food-supply chains. China, for example, has invested billions of dollars in CRISPR gene-editing technology in the hope of feeding the nation and increasing exports.

Davies makes a complicated technology clear, succinct and engaging. Yet he fails to give equal attention to its ecological, social, political and ethical ramifications. The chapter on pushing genetic edits into the environment, for example in mosquitoes designed to suppress those that carry malaria, does not mention whose value systems will shape decisions about deploying such CRISPR-based 'gene drives' in the wild.

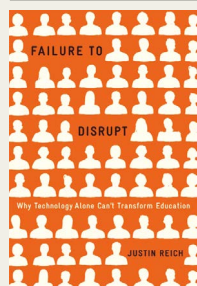
Davies also doesn't fully address the inadequacies of regulatory agencies or inter-governmental bodies. Most do not effectively engage interdisciplinary expertise and affected communities to inform decision-making about CRISPR. Not a single member of the World Health Organization's human-gene-editing advisory committee identifies as having a physical disability. Yet one focus of that group is to develop global-governance standards for CRISPR-based therapies that could one day eliminate certain disabilities such as deafness and dwarfism.

Narratives shape perceptions, and can be used to maintain the status quo or to envision new kinds of futures. I was relieved to see that the book gives contemporary female scientists the leading roles they deserve. But I was troubled by an insensitive remark suggesting that Chinese scientists tend not to be affable, and (given continuing protests over racialized police brutality) by a page-long metaphor likening bacterial immune defences to police surveillance. CRISPR's ability to transform the collective human experience demands social context defined by diverse perspectives, such as can be found in Angela Saini's *Superior*, Françoise Baylis's *Altered Inheritance*, Kim TallBear's *Native American DNA*, Charles Mann's *The Wizard and the Prophet* and Alondra Nelson's *The Social Life of DNA*.

Editing Humanity, one of several popular books on CRISPR just published or in the pipeline, clearly charts the terrain of this new world. But like any map, it can't tell us how to get from A to B. To arrive at a healthy and just future requires an ethical compass, guided by a rich chorus of lived experiences. History is being written and everyone deserves to have a voice.

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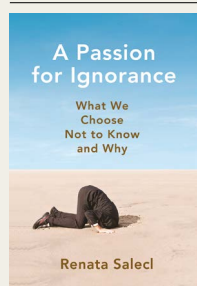
Books in brief



Failure to Disrupt

Justin Reich *Harvard Univ. Press* (2020)

In 1913, Thomas Edison said books would soon become obsolete in schools, as teaching embraced the motion picture. Similar claims for MOOCs (massive open online courses) in the early 2010s already seem dated. Yet as educational researcher Justin Reich observes, video now dominates informal learning, and Wikipedia enchants many educators. His account of digital technology, neither utopian nor dystopian, offers "a tinkerer's guide to learning at scale", to fit — not disrupt — the complex system of school and university education.



A Passion for Ignorance

Renata Salecl *Princeton Univ. Press* (2020)

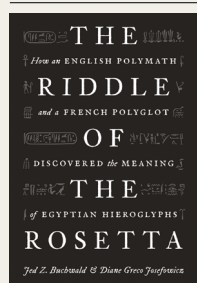
Philosopher and sociologist Renata Salecl begins her study of ignorance with US President Donald Trump's handling of the coronavirus pandemic. In early 2020, he misunderstood the danger to his country. Yet as it became obvious, he claimed: "I felt it was a pandemic long before it was called a pandemic." This attitude, shared by many leaders, revealed both "not knowing (ignorance)" and "not acknowledging (ignoring)" — the intimately related subjects of this compellingly topical book, which ranges from genetics to fake news.



Cubed

Ernő Rubik *Flatiron* (2020)

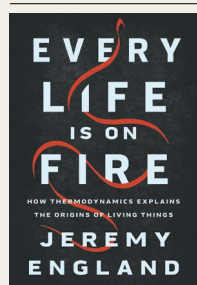
Rubik's Cube needs no introduction, unlike Ernő Rubik. An architect and son of an aircraft designer, born in Second World War Budapest, he had a childhood passion for puzzles. But in his rewarding, idiosyncratic autobiography — his first book; he "hates to write" — he calls himself a lifelong amateur, lacking professional experience of toys or industrial design when he created the cube in 1974. Perhaps his inner feeling explains why both children and adults still contemplate the toy with "a rare moment of peaceful coexistence between order and chaos".



The Riddle of the Rosetta

Jed Z. Buchwald & Diane Greco Josefowicz *Princeton Univ. Press* (2020)

The Rosetta Stone and the deciphering of Egyptian hieroglyphs continue to fascinate. This valuable analysis by historian of science Jed Buchwald and writer Diane Josefowicz combines exhaustive excavation of archives with eclectic biographical elements on the decoders, English polymath Thomas Young and French polyglot Jean-François Champollion. They clarify in unique detail, as far as evidence allows, how much credit should go to Young, to whom the "intemperate" Champollion undoubtedly showed "lack of generosity".



Every Life is on Fire

Jeremy England *Basic* (2020)

Jeremy England trained as a biochemist, gained a physics PhD, is ordained as a rabbi and has been a university physicist and a director in artificial intelligence at drug firm GlaxoSmithKline. These interests feed his book about life's origins, which explores his unproven thermodynamic hypothesis of "dissipative adaptation": that random groups of molecules can self-organize to absorb and dissipate heat from the environment more efficiently. Original, intriguing and theological, the book will probably be scientifically controversial. **Andrew Robinson**