Books & arts

Learn from COVID: Gates's pandemic prescription

The philanthropist's life-saving ideas need insights from political science. **By Matthew M. Kavanagh**

The COVID-19 pandemic was foreseen. Experts everywhere had long predicted a global viral outbreak and called for action to prevent it. World leaders, on the whole, did little. Now, with COVID-19 still raging, Bill Gates has produced a manifesto on what must be done to prevent the next pandemic. Written in accessible prose that even a busy world leader could not fail to grasp, the global-health philanthropist offers some life-saving ideas that are ambitious and achievable – if political leaders act.

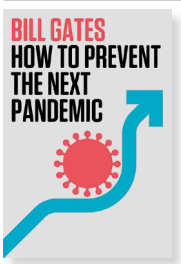
"Learn from COVID" is the opening gambit. One of the book's most important insights is how often the world's wealthiest countries got things wrong that less well-resourced countries and communities got right. Vietnam ran outbreak simulations – something that most of Europe never did. Gates shares the example of a Vietnamese simulation that sent patient-actors into emergency rooms in the northeast of the country to test whether fictionalized cases of Middle East respiratory syndrome would be detected and correctly diagnosed. This exercise revealed gaps in sharing information about potential outbreaks, and the authorities fixed them. South Africa and Nigeria's investment in laboratory capacity made them better able to detect variants than the United States was. The global south offers deep lessons, if US and European experts can humble themselves to learn them.

Likening a pandemic to a fire, Gates reminds us that collective action is essential. "For some 2,000 years, humans have recognized that individual families and businesses aren't solely responsible for protecting themselves." From financing fire departments (at a cost of US$50 billion a year in the United States) to enacting laws that limit people's options (no thatched roofs), government action is expected. It is an apt metaphor given that the pandemic is still ablaze – yet effective legal interventions, such as mask mandates, are being rescinded owing to unprecedented push-back from citizens and judiciaries.

KENT NISHIMURA/*LOS ANGELES TIMES*/SHUTTERSTOCK

The biggest barriers to preventing the next pandemic are political as much as technical.

Gates's specific proposals include building a global team of expert epidemiologists, which he calls GERM (Global Epidemic Response and Mobilization). This would be managed by the World Health Organization (WHO), at a cost of about $1 billion a year, and embedded in national governments to augment today's fragmented and under-resourced pandemic-response teams. Gates also calls for faster development of vaccines and therapeutics, arguing for investment in research and development, delivery technologies such as patches and pills, libraries of promising compounds, distributed manufacturing capacity and more. And he wants proactive surveillance of waste water, so that researchers can "go looking for signals in the environment" and detect viral outbreaks early.



How to Prevent the Next Pandemic
Bill Gates
Knopf (2022)

One of the most important points is Gates's emphasis that the capacity to track causes of death in low- and middle-income countries is a global good. For much of the early part of the COVID-19 pandemic, there was a mistaken belief that low- and middle-income countries were not as badly affected by the disease as wealthier countries were. And this opinion was sometimes used to justify decisions on the distribution of funding, vaccines and other resources. In reality, it was not low mortality that marked out these countries, but rather a lack of mortality data – and total excess deaths from COVID-19 now seem to have been highest in countries such as India (H. Wang *et al. Lancet* **399**, 1513–1536; 2022). Indeed, all too often, global health data are useful to certain political actors but do not help local leaders to make public-health decisions. Gates profiles innovative ideas such as minimally invasive autopsies, which have been piloted in Mozambique and elsewhere to make it easier to track mortality.

How to Prevent the Next Pandemic highlights how the HIV Vaccine Trials Network was mobilized for COVID-19 vaccines, and how polio workers were key to tackling Ebola in West Africa. Fighting pandemics and outbreaks of today, such as HIV, tuberculosis and polio is excellent preparation for future challenges. As the Global Fund to Fight AIDS, Tuberculosis and Malaria seeks to replenish its financing, and the world debates new mechanisms to fund pandemic preparedness, Gates's review of what has worked might suggest that setting up a fund for future pandemics could be less effective than expanding existing pots.

His deep, but highly readable dive into innovation, technology and policy makes sense of complex science. It also shows that the biggest barriers to stopping the next pandemic are not chiefly technical. Gates demonstrates just how much is technologically feasible, evidence-based, cost-effective, and yet not happening.

Herein lies a puzzling gap in this book. As a philanthropist, Gates has steeped himself in the scientific literature, but overlooks insights from the study of politics that could help to reveal why many of its recommendations have not gained traction. He notes

with incredulity and disapproval that some guidance on COVID-19 from the US Centers for Disease Control and Prevention was influenced by politics — yet a deep social-science literature has long explored the contours of political power in all health policymaking.

Gates urges the WHO to work with member states to secure better implementation of international health regulations and to strengthen norms on sharing outbreak information. The agency is already doing exactly this. Yet, as international-relations scholars have shown, it clearly lacks the political power, when acting alone, to compel states to act against their short-term interest (by imposing travel bans, for example). Political analysts suggest that changes in global governance — such as boosting the WHO's power to release emergency funding, or to convene governments and other international organizations beyond the health sector — might prove more important than many technological changes.

Gates calls for free vaccines around the world, but opposes a World Trade Organization waiver that would allow governments to choose which COVID-19 patents to enforce during the pandemic, partly on the grounds that it would be better if companies voluntarily shared their know-how. Yet companies have few incentives to do so without the political intervention of governments: such intervention was key to why prices of AIDS medicines fell by 99% in the first decade of this century.

The study of international relations has a great deal to tell us about governments' behaviour during the COVID-19 pandemic, and about what might change it. The COVAX initiative, for example, failed to reach its goals because countries and companies reneged on their pledges and engaged in vaccine nationalism — acting exactly as studies at the intersection of domestic and international politics would have predicted. Such analysis might have helped COVAX, which aims for equitable access to COVID-19 vaccines worldwide, to avoid assumptions that undermined its efforts to reach 2 billion people in 2021.

With this book, Gates makes a strong, evidence-based argument that the world is not yet thinking about pandemics effectively — but, rather, is missing key innovations and refusing to fund efforts that could save lives and money. A political lens could reveal how to fix that in the world we have today.

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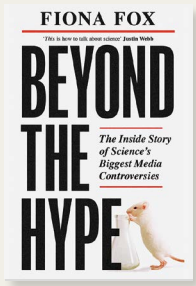
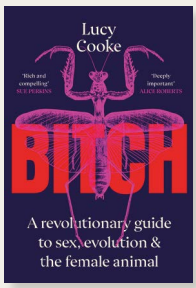
M.M.K. declares competing interests; see go.nature.com/3mp85dj for details.

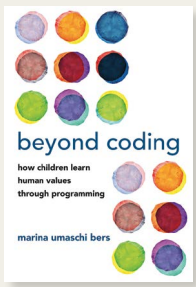
Books in brief



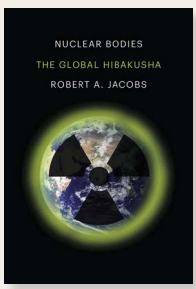
Beyond the Hype
Fiona Fox *Elliott & Thompson* (2022)
It is 20 years since journalist Fiona Fox set up the influential Science Media Centre in London, to persuade more scientists to engage with the media. This absorbing, detailed book is her memoir of that period — not, as she makes clear, an "objective record". Separate chapters deal with controversies such as "Climategate", "Frankenfoods", the politicization of science, sexism in research and how the current pandemic epitomizes an "age-old dichotomy" between the need for simple public messaging and the messy complexity of science.



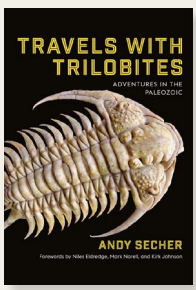
Bitch
Lucy Cooke *Doubleday* (2022)
"Try explaining the need to be passive" to a female spotted hyena (*Crocuta crocuta*), writes zoologist and author Lucy Cooke, "and she'll laugh in your face, after she's bitten it off". She is dominant in rough play, scent-marking and territorial defence. By analysing numerous animals, this sparkling attack on scientific sexism draws on many scientists — of multiple genders — to correct stereotypes of the active male versus passive female. Many such concepts were initiated by Charles Darwin, who is nevertheless Cooke's "scientific idol".



Beyond Coding
Marina Umaschi Bers *MIT Press* (2022)
Early-childhood technologist Marina Bers developed the KIBO robot, which young children can program with coloured, barcoded wooden blocks to learn computer coding. It is the chief character in her engaging book, which presents four key ways to consider coding for kids: as a "playground"; "another language"; a "palette of virtues"; and a "bridge". The palette includes infusing ethics and moral education into programming. The bridge involves finding points of connection between diverse cultural, ethnic and religious groups.



Nuclear Bodies
Robert A. Jacobs *Yale Univ. Press* (2022)
The Japanese word *hibakusha* originally described the victims of the atomic bombs dropped on Japan in 1945. Since the 2011 Fukushima nuclear power-plant disaster, the term has been widely extended to denote worldwide victims of radiation exposure. Yet it does not appear in the *Oxford English Dictionary*: evidence that "these 'global hibakusha' have been largely invisible to us", because of their relative political insignificance, notes Hiroshima-based historian Robert Jacobs in this grimly important analysis of the cold war.



Travels with Trilobites
Andy Secher *Columbia Univ. Press* (2022)
The fascinating marine invertebrate known as a trilobite belongs to the beginning of complex animal life. It appeared some 521 million years ago, and endured for more than 250 million years, evolving more than 25,000 recognized species. Palaeontologist Andy Secher coedits the trilobite website for the American Museum of Natural History in New York City. He owns more than 4,000 trilobite fossils, many of which are pictured in this paean to "the omnipresent monarchs of the world's ancient seas". **Andrew Robinson**