

Australia, a community-based project aligned pro-vaccination messages to shared values; and in the United States, trained community advocates in Washington state promote vaccination in their peer networks.

Berman also draws together personal narratives from parents. Ingvar Ingvarsson, for example, is a father who chose not to vaccinate his children. Then his experience as a nurse, caring for older people dealing with the effects of measles and polio, triggered a re-evaluation. Eventually, his children received their vaccines.

Position of privilege

The role of money and privilege deserves more attention. In the United States in 2018, just 73.2% of children aged 24 months from families without health insurance had received at least one of the recommended 2 doses of MMR vaccine. The figure was 93.7% in families that had private insurance (H. A. Hill *et al.* *Morbidity and Mortality Weekly Report* 68, 913–918; 2019).

Berman distinguishes between two groups of parents whose children are not fully vaccinated: those who reject vaccination, and those who lack access to health care. There should be more emphasis on the have-nots, in my view. Instead, his focus is on the refusers, arguing that because some cannot access care, those who can should be vaccinated.

This is a common blind spot in explanations of low take-up. Poverty, and lack of access to social resources and primary care, greatly affect uptake, as do housing insecurity, gender inequity and racism. The largest measles outbreaks in 2019 were in countries without sufficient primary care, such as Madagascar, or where conflict had displaced people and disrupted their access to vaccines, such as Yemen. Some of the most effective interventions include ensuring that supply chains are reliable, making services highly convenient and simply reminding people that they need to be vaccinated. The current pandemic reminds us that governments cannot ignore poverty and social exclusion if they are to prevent and manage this virus, others unvanquished and those yet to come.

By taking the story of vaccine opposition back to its earliest examples, *Anti-vaxxers* cautions against simplistic solutions. In tracing the movement across three centuries, Berman underlines that is unlikely to be ended by keyboard warriors or the repetition of even the best scientific evidence.

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Books in brief

NET ZERO

How We Stop
Causing Climate
Change

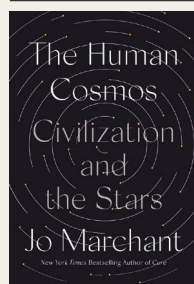


Dieter Helm

Net Zero

Dieter Helm *William Collins* (2020)

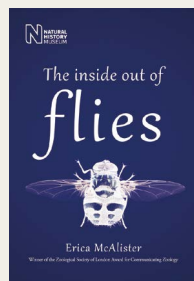
Climate-change economist Dieter Helm was frustrated by a widely repeated claim from the UK Committee on Climate Change: “By reducing emissions produced in the UK to zero, we also end our contribution to rising global temperatures.” Not so, he objects: consumers also import goods and services from countries with high emissions, notably China. As Helm bluntly argues in international detail, reaching ‘net zero’ emissions will require unpopular unilateral changes in individual lifestyles and national infrastructures.



The Human Cosmos

Jo Marchant *Dutton* (2020)

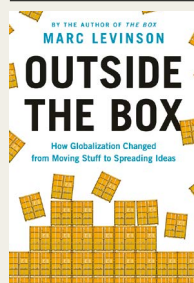
Galileo composed horoscopes for his illegitimate daughters, notes science journalist Jo Marchant in her multifaceted meditation on humanity’s relationship with the cosmos. From possibly celestial Palaeolithic cave art at Lascaux in France to awestruck astronauts in space, she considers how patterns in the sky have governed lives on Earth, “shaping ideas about time and place; power and truth; life and death”. Although science is right to debunk astrology, she argues, the significance of the heavens has been eclipsed by modern astronomy.



The Inside Out of Flies

Erica McAlister *Natural History Museum* (2020)

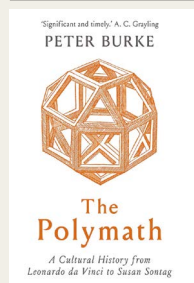
“Flies are not filthy ... they are always cleaning themselves,” notes entomologist Erica McAlister’s caption for a photo of a fly maintaining its antennae — one of many eye-popping images in her erudite, irresistible natural history of the insects. She agrees with naturalist Pliny, who wrote two millennia ago that insects display nature’s “exhaustless ingenuity”. Consider *Ephydra hians*, which “scuba-dives” in alkaline lakes — using hydrophobic hairs that trap an air bubble like an external lung — to lay its eggs on the lake bottom.



Outside the Box

Marc Levinson *Princeton Univ. Press* (2020)

This history of globalization evokes economist Marc Levinson’s 2006 book *The Box*, about container ships. These were key to the ‘third globalization’, starting in the 1980s: products were manufactured in places with low wages, then shipped to the advanced economies where they had been designed. In today’s ‘fourth globalization’, research, engineering and design are moving, and manufacturing can be done anywhere. Much of the process involves ideas, such as software, rather than ‘stuff’ in a box. But how can it be politically regulated?



The Polymath

Peter Burke *Yale Univ. Press* (2020)

From the mid-nineteenth century, science has abounded in specialists, yet polymaths such as Alan Turing and Linus Pauling have remained crucial. In a mind-stretching history, Peter Burke describes “500 western polymaths” from the half-millennium since Leonardo da Vinci. He discusses their curiosity, concentration, memory, speed, imagination, restlessness, hard work and horror of wasting time. But he overlooks specialists with polymathic tendencies, such as Albert Einstein, Florence Nightingale and Ronald Ross. **Andrew Robinson**