

Books & arts



Monuments to resilience or collapse? The 800-year-old statues of Easter Island.

Panicking about societal collapse? Plunder the bookshelves

As civilization seems to be lurching towards a cliff edge, historical case studies are giving way to big data in authors' search for understanding. **By Laura Spinney.**

In case you missed it, the end is nigh. Ever since Jared Diamond published his hugely popular 2005 work *Collapse*, books on the same theme have been arriving with the frequency of palace coups in the late Roman Empire. Clearly, their authors are responding to a universal preoccupation with climate change, as well as to growing financial and political instability and a sense that civilization is lurching towards a cliff edge. Mention

is also made of how big-data tools are shedding new light on historical questions. But do these books have anything useful to share? Any

“What if collapse could usher in not only a renewed world, but a better one?”

actionable points besides that on my coffee mug: “Now panic and freak out”?

The newest is *Before the Collapse*. In it, energy specialist Ugo Bardi urges us not to resist collapse, which is how the Universe tries “to get rid of the old to make space for the new”. Similarly, Diamond’s 2019 book *Upheaval* suggested that a collapse is an opportunity for self-appraisal, after which a society can use its ingenuity to find solutions.



NIJERINWANGI/REUTERS

East Africa is currently battling the biggest locust swarms in decades.

Both writers seem to accept that collapse is inevitable, but they take very different approaches to analysing it. Diamond zooms in to glean lessons from historical case studies; Bardi zooms out to view societies as complex dynamic systems that behave cyclically. Numerous books published in the past few decades chart how research has shifted from Diamond's approach to Bardi's.

Robust debate

Questioning Collapse, a 2009 collection of essays edited by archaeologists Patricia McAnany and Norman Yoffee, took Diamond to task for cherry-picking to spin a good yarn, for example in blaming such iconic societal failures as the population crash of Easter Island on its people's destruction of their own environment. The story is not so simple, the authors argue. The Indigenous Rapa Nui society weathered a string of environmental crises – very few of its own making – yet thrived until the first Europeans arrived. Likewise, is it reasonable to claim that Mayan society collapsed around the ninth century, given that seven million people living in and around Central America speak Mayan languages today? These cases might be better viewed, say McAnany and Yoffee, as lessons in resilience.

Scholars have long warned against peering down the 'retrospectroscope' at apparently neat examples of what not to do. In his influential 1988 *The Collapse of Complex Societies*, archaeologist Joseph Tainter argues that collapse – in the sense of the complete obliteration of a political system and its associated culture – is rare. Even the worst

cases are usually better described as rapid loss of complexity, with remnants of the old society living on in what rises from the ashes. After the 'fall' of Rome in the fifth century, for example, successor states took more than 1,000 years

Collapse: How Societies Choose to Fail or Succeed

Jared Diamond Viking (2005)

Before the Collapse: A Guide to the Other Side of Growth

Ugo Bardi Springer (2020)

Upheaval: Turning Points for Nations in Crisis

Jared Diamond Little Brown (2019)

Questioning Collapse: Human Resilience, Ecological Vulnerability, and the Aftermath of Empire

Edited by Patricia A. McAnany & Norman Yoffee Cambridge Univ. Press (2009)

The Collapse of Complex Societies

Joseph Tainter Cambridge Univ. Press (1988)

Understanding Collapse: Ancient History and Modern Myths

Guy D. Middleton Cambridge Univ. Press (2017)

Why the West Rules – for Now: The Patterns of History, and What They Reveal About the Future

Ian Morris Farrar, Straus and Giroux (2010)

War and Peace and War: The Rise and Fall of Empires

Peter Turchin Pi (2006)

Revolution and Rebellion in the Early Modern World

Jack Goldstone Univ. California Press (1991)

to achieve comparable economic and technological sophistication, but were always recognizably the empire's offspring.

Nevertheless, societies do go through rocky patches, from which some emerge transformed. It's not surprising that scholars should want to understand why. In his thoughtful *Understanding Collapse* (2017), archaeologist Guy Middleton surveys more than 40 theories of collapse – including Diamond's – and concludes that the cause is almost always identified as external to the society. Perennial favourites include climate change and barbarian invasions – or, in the Hollywood version, alien lizards. The theories say more about the theorists and their times, Middleton argues, than about the true causes of collapse.

Under strain

The pressing question, Tainter told a workshop on collapse at Princeton University in New Jersey last April, is why can a society withstand repeated external blows – until one day it cannot? For him, a society fails when it is no longer able to adapt to diminishing returns on innovation: when it can't afford the bureaucracy required to run it, say. In *Why the West Rules – For Now* (2010), historian Ian Morris proposes a twist on this, namely that the key to a society's success lies in its ability to capture energy – by extracting it from the ground, for example, or from nuclear fission once fossil fuels have run out. By contrast, Peter Turchin, author of the 2006 *War and Peace and War*, suggests that collapse is what happens when a society stops being able to deal with the strains caused by population

growth, leading to inequality and strife.

Turchin has been compared to Hari Seldon, science-fiction writer Isaac Asimov's "psycho-historian", who studies the past to statistically predict the future. He belongs to a new breed of scientific historian taking a big-data approach, and argues – controversially – that societal spasms are cyclic. This idea itself comes and goes: the ancient Greeks took the cyclic nature of history for granted, but it has been unfashionable since the Enlightenment. Today, we tend to have a linear concept of progress, in which life generally improves for most people over the long term. Works such as Turchin's see this trend as superimposed on an inherent cyclicity in the evolution of societies.

Reboot cycle

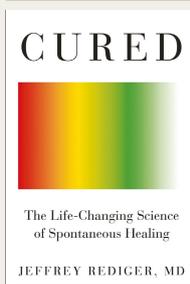
This raises the question of whether collapse is essential to renewal. Without winter, can you have spring? Bardi says no. Whether you think this good or bad depends partly on your point of view. The mass extinction 66 million years ago was bad for dinosaurs, but good for mammals, sociologist Miguel Centeno observed at the Princeton workshop, which he convened. But if collapse could usher in not only a renewed world, but a better one, shouldn't we dinosaurs embrace it?

For Turchin and Jack Goldstone – on whose work on the demographic forces shaping history Turchin builds – this is good advice only if you understand what causes collapse. Then it might be possible to make the transition less violent or disruptive. Goldstone rigorously dissected upheaval in the sixteenth to the nineteenth centuries in his 1991 book *Revolution and Rebellion in the Early Modern World*. This convinced him that revolution is an inappropriate response to societal tensions, usually leading to tyranny. Solutions have come instead from deep, meaningful reform. Yet the idea that revolution removes obstacles to progress has "deluded literally billions of people", he argues.

An interdisciplinary community of researchers is now searching for patterns that have defined collapse throughout history, to determine what might be an appropriate response. If we can't and shouldn't prevent a future crisis, could we at least soften it – perhaps with the help of new technologies – so that renewal happens, but less is lost and fewer people suffer? Even if the mind-boggling complexity of human societies makes this a pipe dream, as some argue, it seems a sounder approach than sparring over case studies that might not have constituted collapse at all. Speaking as a dinosaur, whose only alternative is to panic and freak out, I'll take it.

Laura Spinney is a science writer based in Paris. Her most recent book is *Pale Rider: The Spanish Flu of 1918 and How it Changed the World*. e-mail: lspinney@gmail.com

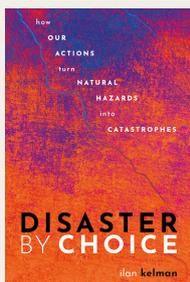
Books in brief



Cured

Jeffrey Rediger Flatiron (2020)

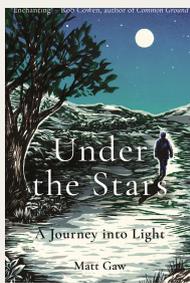
An experienced physician who is also a skilled, driven and compassionate writer is a winning combination. This pioneering book by psychiatrist Jeffrey Rediger analyses unexplained spontaneous recoveries from potentially fatal medical conditions, including cancer. From interviewing patients over nearly two decades, Rediger concludes that each recovery was "unique" and only partially explicable, but that all provide evidence of "a powerful link" between our identities and our immune systems.



Disaster by Choice

Ilan Kelman Oxford Univ. Press (2020)

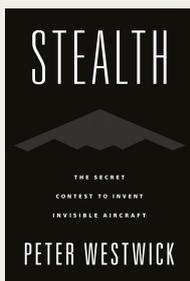
Human choices cause disasters, but can also prevent them, argues Ilan Kelman in this grimly informative history. A specialist in disasters and health, he surveys earthquakes, epidemics, floods and more in a range of countries. Thus, in 2010, a magnitude-7.1 earthquake near Christchurch, New Zealand, caused not a single death. The same year, a magnitude-7.0 quake in Haiti caused at least 100,000 fatalities and a cholera outbreak – because of poor buildings and health care. Scientific foresight and political will are always key to resilience.



Under the Stars

Matt Gaw Elliott & Thompson (2020)

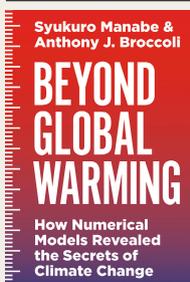
The Milky Way is invisible to 77% of today's UK population because of artificial light, notes naturalist and journalist Matt Gaw: "Many adults and children, my own included, have never seen it." Such thoughts inspired this poetically written but scientifically grounded study of darkness and its effect on humans and wildlife. Gaw describes night wanderings on English beaches, across Dartmoor and in central London. On the Scottish island Coll, a Dark Sky Community without a single street light, his children were entranced by the stars.



Stealth

Peter Westwick Oxford Univ. Press (2020)

In 1961, Dwight Eisenhower warned in his last address as US president that the "military-industrial complex" must be checked for the sake of "security and liberty". Historian Peter Westwick is more positive in his incisive narrative of the top-secret 1970s invention and construction of the stealth plane F-117. Nearly invisible to Soviet-designed radar, it was used to crucial effect in the 1991 Gulf War. Westwick argues that it offered an alternative to nuclear weapons, but admits that "to defend American liberties, aerospace engineers gave up civil liberties".



Beyond Global Warming

Syukuro Manabe & Anthony J. Broccoli Princeton Univ. Press (2020)

The first global climate model, developed in 1896 by chemist Svante Arrhenius, included the warming effect of atmospheric carbon dioxide. In the 1960s, meteorologist Syukuro Manabe pioneered computer simulation of climate change. Manabe's book written with atmospheric scientist Anthony Broccoli has evolved from his lecture notes, with chapters on, for example, general circulation models. Although technical, it should prove useful to those wishing to understand global warming's future impact. **Andrew Robinson**