

## Book

## Mapping our common future

We used to search the skies for clues to the future, seeing in the wheel of the planets and constellations evidence of our fate. Other traditions made use of entrails (extispicy) or even arrows (belomancy). Such divination practitioners pursued a deeply human desire to discern aspects of the future through visual patterns in the present. We do things differently now, priding ourselves on evidence, science, and data. A promising way to approach the prediction of the future might well be to map it. All maps are necessarily incomplete—models reflecting the values of their cartographers—but their simplifications offer revelations. In *Terra Incognita: 100 Maps to Survive the Next 100 Years*, Ian Goldin and Robert Muggah work to elucidate patterns that might predict the future of humanity.

The authors' focus is on themes pertinent to their academic roles in the fields of globalisation, development, and security; some of their 15 chapter titles include climate, urbanisation, violence, migration, health, and education. Many of the maps are refreshingly counterintuitive: there are record numbers of refugees in the world today, but as a share of global population migration is not increasing. Climate change is fuelling violence—notably, along the Euphrates and Nile basins—yet the past 50 years have seen deaths from war more than halve. In western Europe, you're now more likely to die from a lightning strike than from terrorism. Overall, Goldin and Muggah balance pessimism and optimism. "We use maps to explain some of our gravest existential challenges and a few of the most inspiring solutions", they write; "we are living through a period of disorientating uncertainty and boundless opportunity".

The maps are beautiful, startling in what they convey: purple ribbons of internet connectivity wrap Europe, east Asia, and north America in

knotted bows of terabytes. The same geographical locations light up in the maps that show the concentrations of international trade, finance, and patent registrations. But then a few pages later, on the mapping of plastic pollution, a new pattern is revealed: east Asia and India sink under mountains of waste, while Latin America and Africa labour under a heavier burden of

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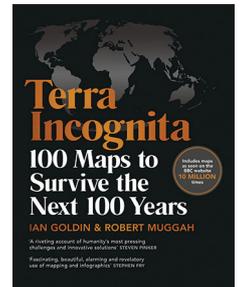
"mismanaged plastic" than either Europe or North America.

On climate, Goldin and Muggah present a series of before-and-after images detailing the extent to which we are losing ice, old-growth forest, and coastal land, as global temperatures and sea levels rise. From Florida to Holland to Jakarta, they present new shorelines, shocking in their distortions. Urbanisation too seems inexorable: 30 years of development has sextupled the size of Lagos and quadrupled that of Las Vegas—both are satellite-mapped alongside a series of images that demonstrate the epic rise of east Asian cities, particularly the megacity that now stretches from Beijing to Dongyin—an urban sprawl encompassing some 11 cities that are home to a combined 130 million inhabitants. The urban maps provide some of the most surprising instant comparators—cities could be coming to hold more importance than nation states. According to Muggah and Goldin, New York consumes more energy than the whole of sub-Saharan Africa, and the economy of metropolitan New York is equivalent to the economy of Russia; Paris has a bigger economy than South Africa, and Los Angeles bigger than Australia.

The COVID-19 pandemic has seen every government wake up to the devastation that infectious disease can inflict on societies and economies as much as on individual human lives, and readers of this journal might be forgiven for turning first to the pages on health. The picture is much happier there than elsewhere in Goldin and Muggah's book. Humanity has doubled its lifespan in a century, with the greatest recent gains in Latin America and Asia, where lives have lengthened by more than 20 years since 1960. Child mortality is tumbling in many countries, although gains are much slower in Africa than elsewhere, as they are with maternal deaths. Although microbial resistance is on the rise everywhere, the pages that map the gradual extinction of smallpox gave me hope that we might one day achieve something similar with other plagues: measles and polio, if not COVID-19—not only through vaccination, but also through socioeconomic development and a transformative recognition of the paramount importance of public health.

"In spite of achieving monumental progress over the last century, humanity faces threats of biblical proportions in the current one", Muggah and Goldin conclude. COVID-19 is a "symptom of globalisation", but the response to it has shown how fundamental it remains that nations cooperate. "We need to forge new alliances, commit ourselves to stretch targets, and urgently act on our knowledge of the many risks we face", they write. Divination by stars, by arrows, or by entrails was always a fool's game; as Muggah and Goldin suggest, "the best way to determine the future is to shape it".

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