Book Reviews

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Why is an epidemiology journal reviewing this book? After all, ‘epidemiology’ and ‘health’ do not appear in the index. Perhaps the journal editors sense that this book casts light on today’s emerging large-scale risks to population health: the risks from global climate change, degradation of arable land, fisheries depletion, widespread freshwater shortages, and losses of species and ecosystems. Indeed, should epidemiologists be re-balancing their research portfolios as evidence accrues that macroscopic social and environmental trends are now weakening, or likely to weaken, many of the basic supports for population health?

Collapse tackles a big question: Why, when facing environmental decline, do some societies succeed while others fail? Jared Diamond’s previous book Guns, Germs and Steel argued that some societies became more powerful, wealthy, and dominant because of fortuitous circumstances: geography, natural resources (especially plant and animal species), and the diffusion of technologies. Collapse explores why some societies have failed to achieve sustainable management of their resource base and their social structures.

As an experienced and upmarket popular-science writer, given to extensive research, the author does more than repackaging. He poses important, contemporary questions and seeks answers in multidisciplinary terms. Diamond is an academic physiologist and ecologist, with overviews of evolutionary biology, environmental science, and social sciences. The structure of this book is more complex than Guns, Germs and Steel; the writing is a bit more ‘American’, with extensive use of personalized environmental vignettes from his much-loved Montana region as a reference point for the ideas of environmental and social sustainability that infuse the book.

Diamond present instructive contrasts in ‘collapse’ between Vikings in Greenland during the slightly warmer Middle Ages (cultural rigidity, marginal environmental assets, and an inability to cope with a changing climate as cooling beset 14th century Europe); the Mayans (a century-long shift in climatic conditions that impaired food production, around a 1000 years ago); the Anasazi of the American South-west (exhaustion of freshwater supplies); and Easter Island (a seemingly compulsive consumption and destruction of the resource base, on an isolated island without trading options, leading to fratricidal conflict breaking out in response to hunger, fuel shortages, social disorder, and inter-community territoriality).

Mayans aside, Diamond has chosen mostly smaller and less complex societies, including island-states. He has little to say about the well-known declines of the southern Mesopotamia states ~3000 years ago (largely owing to exhaustion of farmlands, on top of a drying climatic cycle), nor the declines of Greece, Rome, and the Indus Valley city-states of Harappa and Mohenjodaro.

From his chosen historical examples Diamond posits five factors that influence the fate of such societies: the extent of environmental degradation; changes in climatic conditions; the hostility and power of neighbours; support from trading with friendly neighbours; and internal power relations, governance, and decision-making capacity. Appropriately, he explores the counter-factual question: Do societies that do well on these criteria avoid decline when faced with environmental degradation of their own making? He points to the South-west Pacific islanders of Tikopia, New Guinea highlanders, and Tokugawa Japan. From those he infers that a combination of cultural flexibility, accrued and applied wisdom, and acceptance of the need for restraint have enabled alleviation of situations of ecological vulnerability.

Other ‘collapses’ in history have often been due to devastation by infectious diseases. That consideration is outside the frame of this book—although Diamond’s previous book describes the remarkable ease with which the Spanish conquered the Aztecs and Incas, assisted by their European viral travelling companions (influenza, smallpox, measles). The bubonic plague in 14th century Europe contributed greatly to the collapse of the feudal system. Analogous to some of Diamond’s island-population examples, small under-resourced communities can be seriously destabilized by infectious disease. European introduction of gonorrhoea and other infections to the islands of New Ireland (adjoining Papua New Guinea) early last century caused a marked localized decline in fertility and falling population size. Today, the small African states of Lesotho and Swaziland teeter precariously as HIV/AIDS cuts swathes through their human and social capital.

Authors who transcend many disciplines can offend many people. Diamond has been criticized for not being a trained
historian, for not understanding the role of influential individuals in historical bifurcations, and so on. Further, are these instances of historical ‘collapse’ relevant to today’s societies? Are we not now better informed about the natural world and its limits; do we not have reader information flow and democratic decision-making; are we not better equipped technologically to find solutions to problems? Yes, says Diamond, but contemporary societies are, in many ways, even more vulnerable by dint of population size, immovability, and dependence on extremely high levels of resource consumption.

Manifestly, the story of environmental mismanagement continues today. Societies are often slow to recognize the enormity of the problems bearing down on them. Think of the recent doubts and denial in relation to climate change. Besides, societies are reluctant to incur costs today for the sake of the future. China, Haiti (compared with its island-sharing neighbour Dominican Republic), and Australia, Diamond argues, all point in that direction. In Australia’s case, European and other settlers have rapidly degraded much of the natural environment in just two centuries—river systems, aquifers, forest and woodland cover, soil fertility, stocks of biodiversity, and, now, the Great Barrier Reef (bleaching from warming and polluted coastal water-runoff) and the Kakadu wetlands (including the invasion by cane toads, foolishly introduced from Hawaii in the 1930s).

What does this book mean for epidemiologists? Well, first, as citizens of the world, we can learn from history something about the prerequisites for sustainable management of the natural resource base and of cohesive societies. Second, the unprecedented scale of the changes to Earth’s natural systems, now occurring in response to the weight of human demand, poses widespread risks to population health. We face diverse environmental, demographic, and social changes on a scale beyond human experience. Yet we know that erosion of the basic supports for population health—food yields, freshwater supplies, climatic stability, constraints on microbial activity, the recycling of nutrients, and the aesthetic and spiritual values that flow from nature—will jeopardize health.

Epidemiologists, during the expansive ‘modern’ era of their discipline, have spent the past half-century mostly studying determinants of within-population disease risks. Hopefully, we will now extend our efforts to assisting society understand the spectrum, and significance, of emerging larger-scale risks to health. Behind the contemporary concern to achieve a sustainable way of managing the natural world lurks the fear that the alternative may entail ‘collapse’. If so, for at least some populations, the DALYs count would then dwarf the illustrative figures in our textbooks.

A J M McMichael
E-mail: tony.mcmichael@anu.edu.au

References